OCTOBER - DECEMBER 1988

STRICTLY CONFIDENTIAL

QUARTERLY REPORT

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RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

DIVISION : RESEARCH

SUBJECT TITLE : TITANIA

PERIOD COVERED : OCTOBER - DECEMBER 1988

WRITTEN BY : Hofer-M. (MIH), Berney-J. (JBE)

KEYWORDS : bacillus, spore, germination, cell, water-activity, ph, inhibition, activation, heat-shock, cigarette, taste

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OBJECTIVE

To study risks of physiological changes in the bacterial population during tobacco processing and storage, and to investigate their impact on the organoleptic and chemical properties of tobacco.

STATUS

The effect of the heat-shock on Bacillus spore germination was investigated as a function of water activity.

Cellular extracts of germinated spores were added to cut tobacco for analytical and subjective evaluation.

RESULTS

Germination activation

In order to establish the impact of tobacco processing on Bacillus spore germination, the effects of heat-shock in combination with water activity (aw) were evaluated in simulation trials. Simulation media were prepared from tobacco extract supplemented with glycerol to obtain aw values ranging between 0.77 and 1.0 [1]. Spore suspensions were heat-shocked at 60, 70, 80, 90 and 100°C for 30 min. and cooled rapidly prior to the incubation in tobacco medium. Germination was followed over time by measuring the loss in absorbance at 660 nm [2].

Fig. 1 shows the effects of heat-shock temperature on spore germination for aw = 1.0. At 90 and 100°C no germination could be observed. Compared to control the trials activated at 60, 70

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and 80°C show no lag phase at the beginning of germination. Completion of germination decreases by increasing activation temperature. After 90 min., 100% of the spore population had germinated at 60°C, 90% at 70°C and only 75% at 80°C. The germination rates follow the same trend. At 60 and 70°C the maximum rate measured was 2%/min. and at 80°C 1%/min. A germination rate of only 0.5%/min. was found in the control.

Fig. 2 shows combined effects of heat-shock and water activity after 120 min. incubation for five different aw values. In the range of 0.9-1.0, spore germination is clearly activated by a heat-shock between 60 and 70°C compared to an unheated control. The version treated at 80°C shows the same profile as the control. At 90°C a slight germination (10%) was observed for aw values of 0.9, but no germination was recorded for the activation at 100°C. The germination activation created by a heat-shock between 60 and 70°C and a water activity of between 0.9 and 1.0 corresponds to situations encountered during tobacco processing.

Germination and off-taste

A relation between Bacillus spore germination and a taste change in cigarettes was found [3]. It was assumed that activation conditions created in the dryer allowed spores to germinate and that germinated cells unable to outgrow on tobacco due to low aw are osmolysed. In order to verify this implication, a B. pumilus spore preparation was allowed to germinate, germinated cells were broken and cellular extract was injected into cigarettes for subjective evaluation. Two versions were prepared : one with the equivalent of the tobacco microflora (i.e. 10^6 cells/g) and the other with ten times more cell extract. After conditioning, the two versions, as well as a water treated control were evaluated vs an untreated control by an in-house panel.

Version	Comments	Preference
untreated control	standard quality	1
control + water	idem control	1
+ 1 cell. equival.	less flavor sensations, slight dark side	3
+ 10 cell. equival.	after taste, cover the mouth, dark side	4

Preferences : 1 = best 4 = worst

Both controls were in line with the standard quality. An increase in taste change was recorded with increasing cellular extract concentration. The main line in the taste description concerns a deviation to the dark side. This dark note was also described by an expert panel for off-taste cigarettes from project PLEIADE [3,4].

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CONCLUSIONS

Heat-shock temperatures of 60 and 70°C in the aw range of 0.9-1.0 considerably accelerate Bacillus pumilus spore germination.

Cellular extract of germinated spores added to cut filler causes off-taste in cigarettes.

PLANS

- Study germination activation by heat-shock and aw during Burley and cut tobacco treatments.
- Produce at mini-primary scale a cut filler sprayed with cellular extract of germinated spores for subjective and chemical evaluation.
- Verify the impact of cellular extract on cigarette taste by panel A evaluation and establish a correlation with known off-taste problems.
- Collaborate on chemical investigations on cellular extract composition and the possible interactions with the tobacco matrix.

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[2] Kälin-P., Quarterly Report, EUROP, April-June 1988.
[3] Memo from Hofer-M. to Fink-W., Project PLEIADE I, July 14, 1988.
[4] Memo from Hofer-M. to Fink-W., Project PLEIADE II, November 22, 1988.

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Figure 1 :

EFFECT OF HEAT-SHOCK ON SPORE GERMINATION
AW = 1

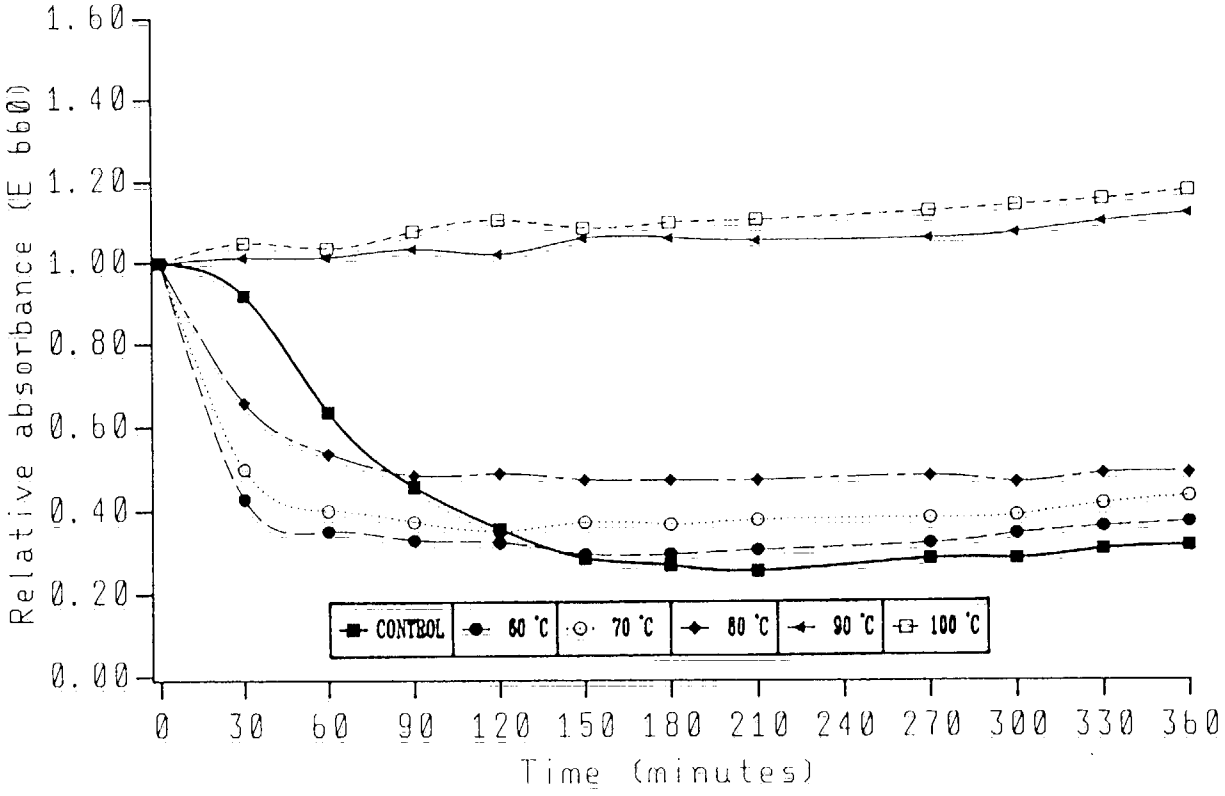

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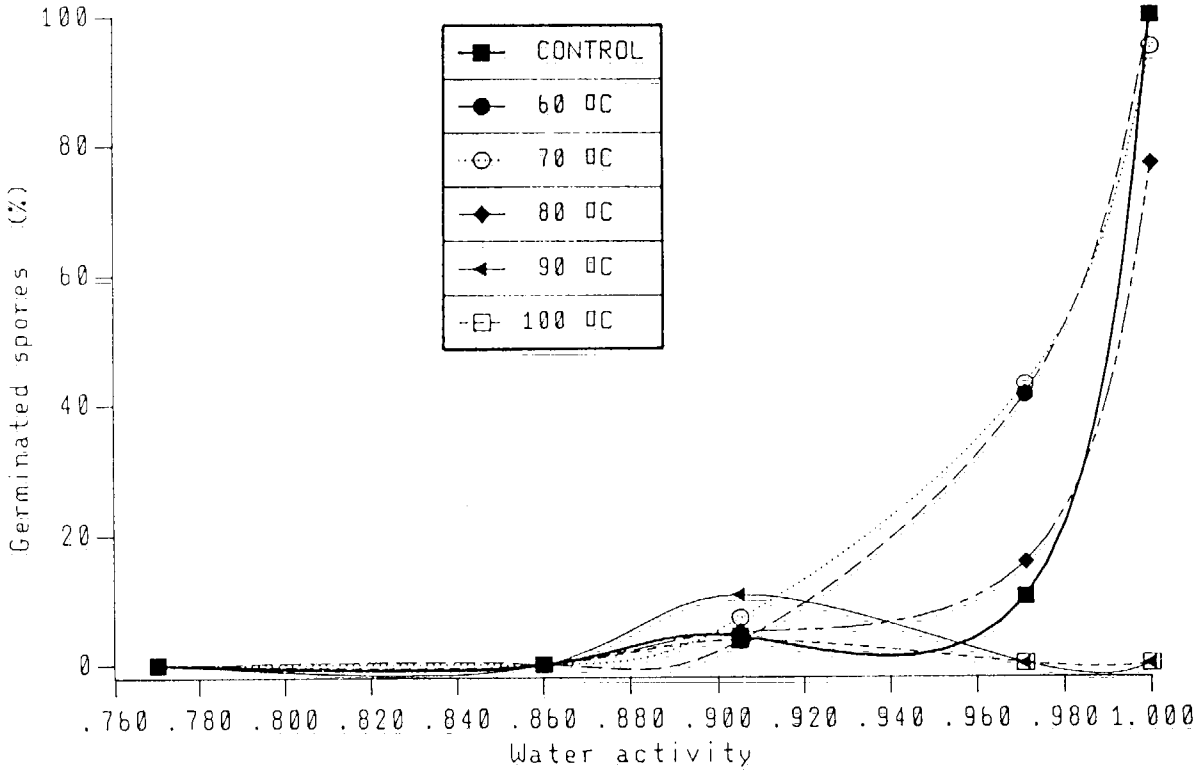
Figure 2 :

EFFECT OF HEAT-SHOCK ON SPORE GERMINATION
AS A FUNCTION OF WATER ACTIVITY



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RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

DIVISION	:	RESEARCH
SUBJECT TITLE	:	EUROP
PERIOD COVERED	:	OCTOBER - DECEMBER 1988
WRITTEN BY	:	Kälin-P. (PAK), Hofer-M. (MIH)
KEYWORDS	:	bacteria, bacillus, biocontrol, rl, sel, preservative, d-alanine, spore, vegetative-cell, germination, park-500, trial

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OBJECTIVE

To control the germination of bacterial spores during tobacco processing and the bacterial proliferation in the RL process in order to replace traditional preservative systems by a biocontrol agent.

STATUS

PME trials : simulated SEL

Bacillus pumilus spore germination was measured as a function of incubation temperature. The stability of D-alanine was evaluated over time in simulated SEL extracts. A certain number of substances were analysed before and after germination process in tobacco extracts.
Bacteria isolated in PM-US from laboratory-spoiled Park 500 SEL were identified.

PM-US trials : Park 500 SEL

A series of experiments were conducted in Richmond by M. Hofer in order to evaluate the efficiency of D-alanine in the prevention of Park 500 SEL spoilage.

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RESULTS

PME trials

- Germination at different temperatures
  The germination was measured by loss of absorbance at 660 nm after inoculation by B. pumilus spore suspension [1] in SEL extract at 25, 37, 45, 50, 55°C (Fig. 1).
  The faster rate was observed at 37°C with germination completed after 4 hours.
  After 24 hours incubation germination ratio was about 90% at 50°C but was 0% at 55°C.

- D-alanine stability
  Sterile SEL supplemented with 900 mg/l D-alanine was incubated at 37°C. Samples taken over time were inoculated with B. pumilus spores and checked for germination. After 48 hours incubation, germination inhibition was still complete. In trials with physiologically heterogeneous cultures containing not only spores but also some vegetative cells, germination was often detected after 24 hours incubation [2]. This was probably due to disappearance of D-alanine by degradation, transformation or consumption by vegetative cells in growing stage.

- Chemical analysis
  Cut filler and SEL extracts, before and after germination of B. pumilus spores at 37°C, were sent to different laboratories for analysis. The levels of reducing sugars, total alcaloids, NO_3, NH_3, K, Mg, Ca, Na and amino acids were measured.
  No significant or reproducible changes of any analysed substances were found between the results of analyses before and after germination.

- US strains
  Seven sporulating Gram positive bacteria isolated from laboratory-spoiled Park 500 SEL were tentatively characterized by known morphological comparisons and biochemical tests [3,4].

Isolate code	Strain
8397-70-1	B. circulans
8397-70-2A	--
8397-70-4	B. circulans
8397-70-B	B. circulans
8397-70-C	B. circulans
8397-70-13	B. licheniformis
8397-70-8246	--

Isolates 8397-70-2A and -8246 could not be identified at this time.
Strain -13 was the only one able to grow in SEL extract at 37°C.

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PM-US trials

A double procedure developed by the Project 1730 Research Group was applied to test the efficiency of D-alanine on Park 500 SEL. As efficacy of D-alanine decreases when germinated and vegetative cells are present, it is obvious that D-alanine should be incorporated as soon as possible during feedstock extraction in the RL process. D-alanine will block spore germination activation while, at the same time, hot water kills all germinated and vegetative forms.
As such an evaluation was not possible in Park 500, the procedure was modified by introducing a heat-shock (30-45' at 78°C) of the SEL prior to incubation.

In a first phase, 4 liters of SEL samples from Park 500 line II cleaner feed tank, with and without addition of 1000 mg/l of D-alanine, were incubated at 42°C into bioreactors under 100 RPM stirring. The pH value was recorded over time and samples were taken daily for microbial counting (CFUs = colony forming units) as well as reducing sugar, acetic acid, N-nitrate and soluble ammonia analyses.
D-alanine did not show any effect in the first experiment without heat treatment. Fig. 2 shows that both pH curves are similar, decreasing first, then increasing after 6 hours incubation. These results are confirmed by the bacterial counting (Fig. 3). One morphological type of colony formed appears to increase from the beginning of the incubation (Fig. 4).
As a result of this bacterial development a certain number of chemical changes were analysed in the SEL. Figs. 5 to 8 show the total reducing sugar consumption with production of acetic acid and the utilization of the nitrate through the conversion into soluble ammonia.

In the second experiment with pre-heated SEL, most of the vegetative cells were killed. The inhibition effect on spore germination of D-alanine is illustrated by the pH recording (Fig. 8).
After 24 hours, the pH value of the control version starts changing like the unheated versions of trial 1. In the D-alanine treated version, however, no dramatic change could be recorded after 72 hours.

In a second phase, flasks filled with 100 ml SEL were supplemented with 225, 450, 675 and 900 mg/l D-alanine as well as an untreated control. Two more versions were added to these series : another control and a version with 900 mg/l D-alanine, both pre-heated at 78°C for 30 min. CFUs and pH were measured over time.
Confirming the results of bioreactor assay the unheated versions with different D-alanine concentrations were spoiled like the control after one day.
In the heated versions, the conclusions were also similar. The pH and CFUs changes in the heated versus unheated controls were only delayed for 24 hours. In the 900 mg/l D-alanine version, no changes could be recorded during a 168 hours incubation (Figs. 10 and 11).

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The spoilage of the control was attributed to one morphological type of colony (small). The spore germination of this Bacillus type seems to be inhibited by D-alanine (Fig. 12). An attempt to repeat this trial with all D-alanine versions heat-shocked at 78°C for 30 min was unsuccessful. The control as well as all the treated versions were unspoiled after 7 days.

CONCLUSIONS

- A temperature of 55°C, and to a lesser extent 50°C, inhibits germination of B. pumilus spores in SEL.
- The presence of vegetative cells in a culture reduces the efficiency of D-alanine as an inhibitor of spore germination.
- Added to fresh SEL, D-alanine has no effect on bacterial spoilage when incubated in propitious conditions of growing.
- The efficacy of D-alanine was demonstrated in heat-shocked Park 500 SEL.

PLANS

- Study the effects of D-alanine on Bacillus cell physiology during RL feedstock hot extraction.
- Repeat the dose response trial with heat-shocked SEL in order to determine the optimal D-alanine concentration to prevent spoilage.

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Figure 1

EFFECT OF INCUBATION TEMPERATURE ON SPORE GERMINATION IN SEL EXTRACT

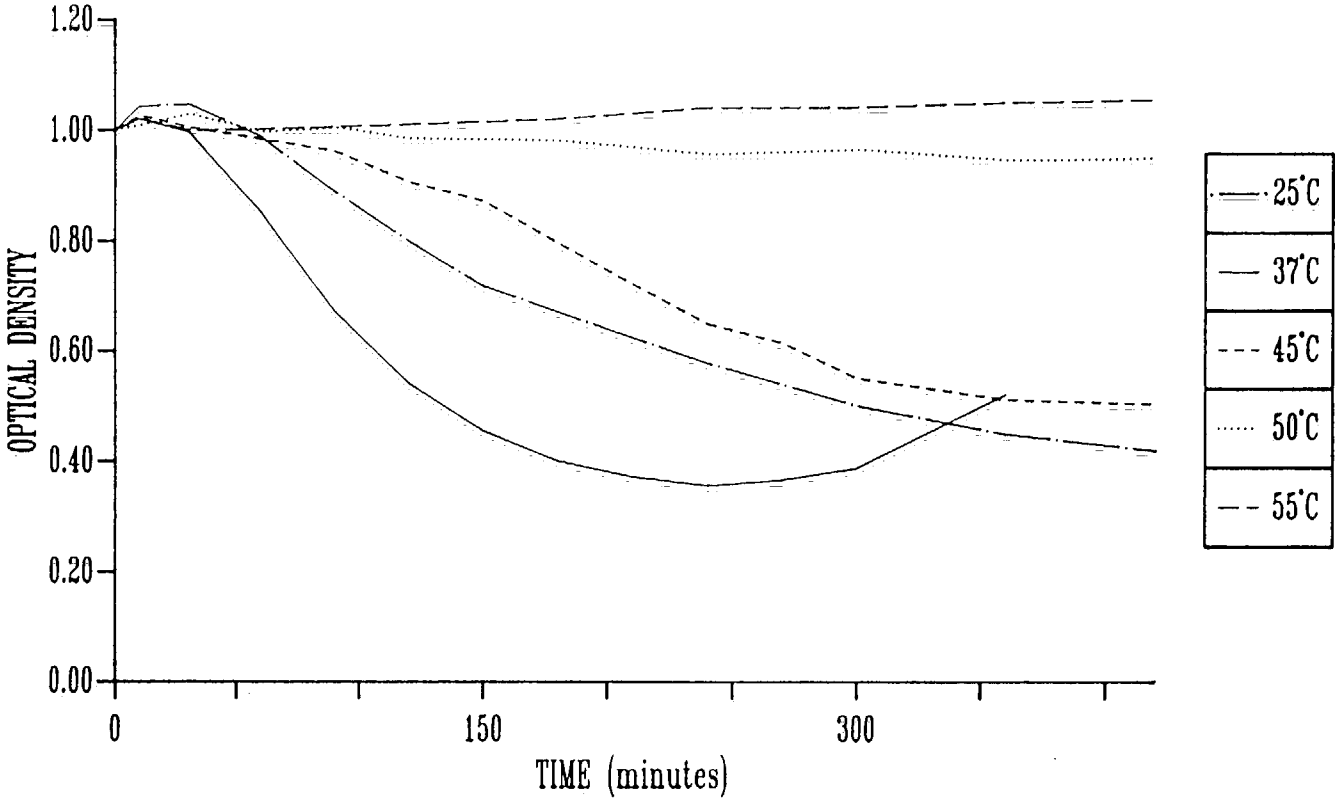

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Figure 2 EFFECT OF D-ALANINE IN PARK 500 SEL
Bioreactor experiment

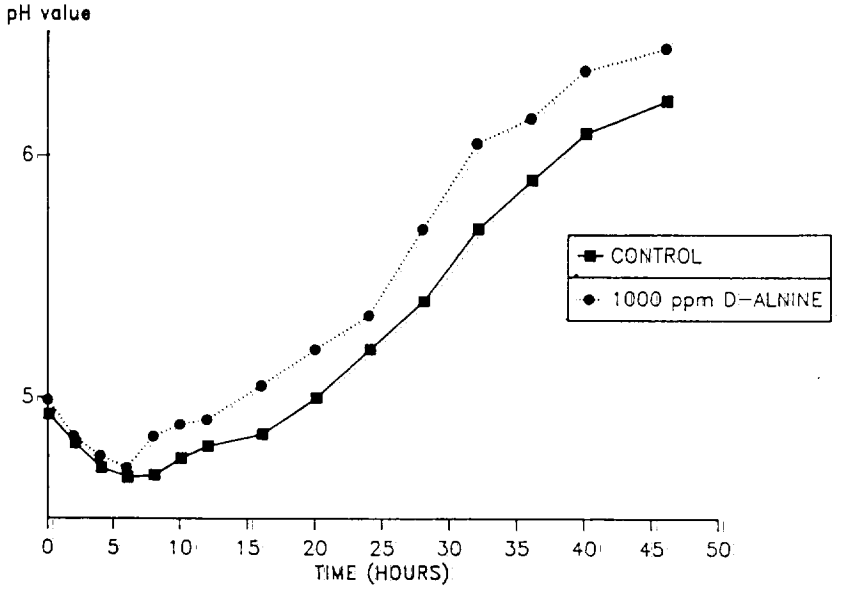

Figure 3 EFFECT OF D-ALANINE IN PARK 500 SEL
Bioreactor experiment

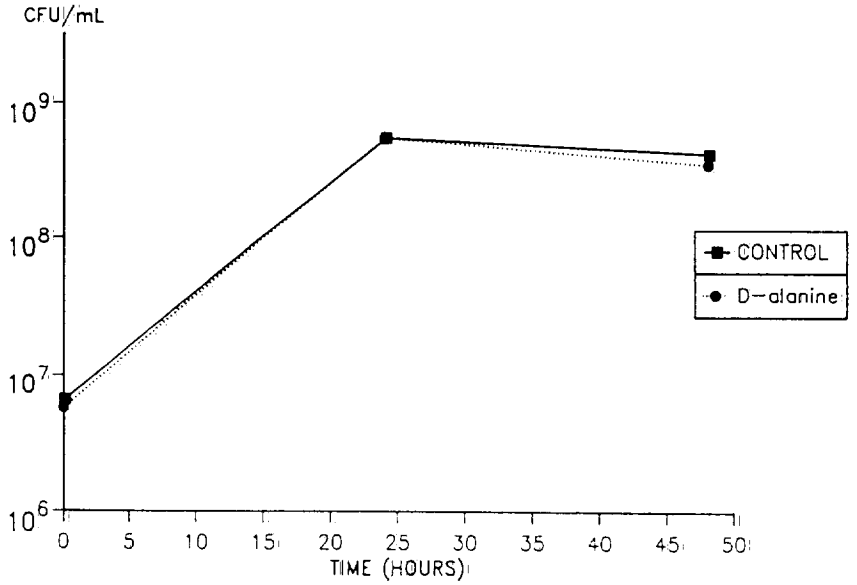

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Figure 4

EFFECT OF D-ALANINE ON DIFFERENT CLASSES OF BACTERIA IN SEL
Bioreactor experiment

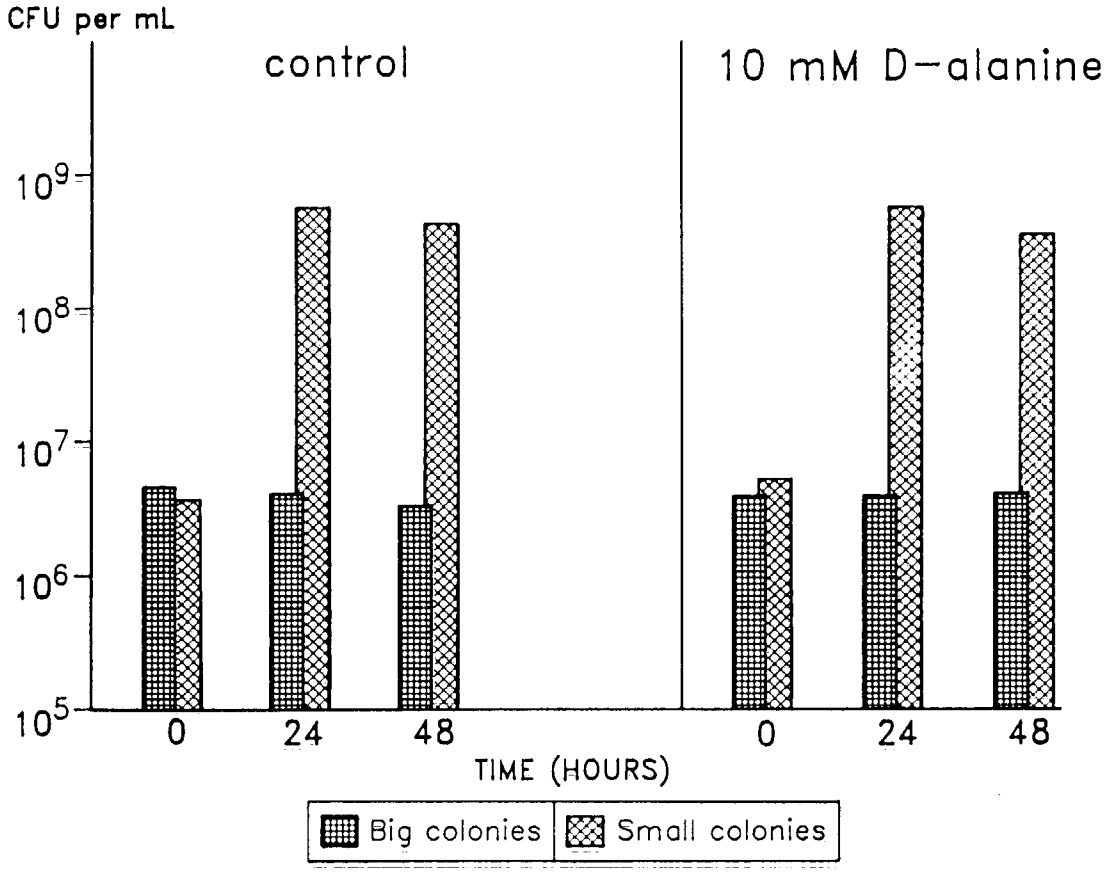

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Figure 5 EFFECT OF D-ALANINE IN PARK 500 SEL
Bioreactor experiment

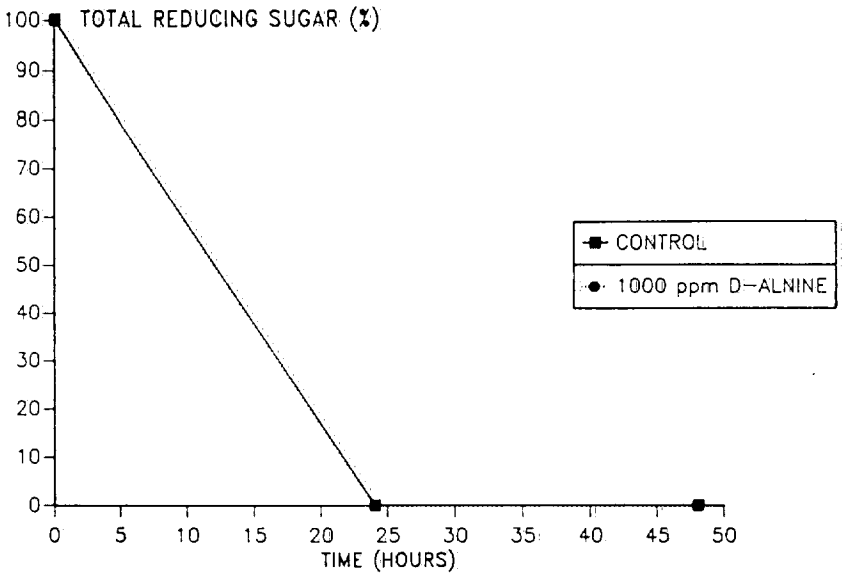

Figure 6 EFFECT OF D-ALANINE IN PARK 500 SEL
Bioreactor experiment

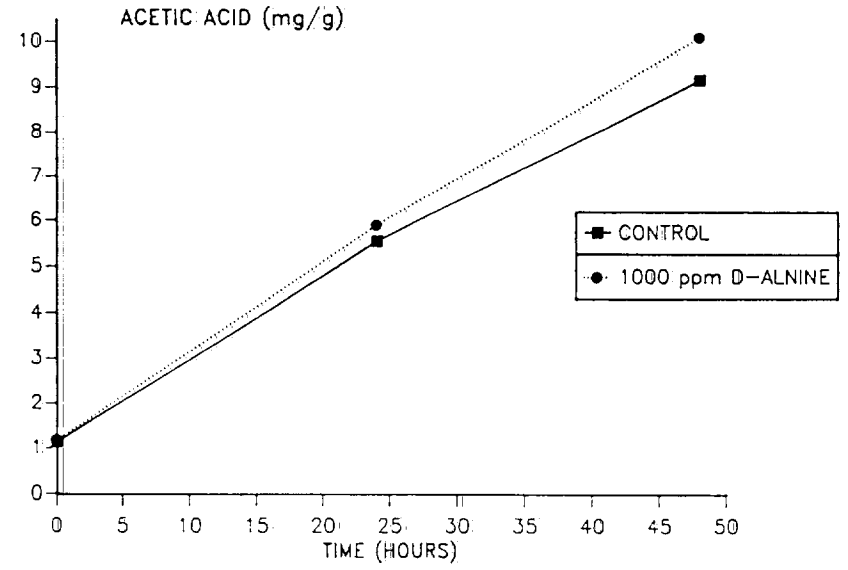

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Figure 7 EFFECT OF D-ALANINE IN PARK 500 SEL
Bioreactor experiment

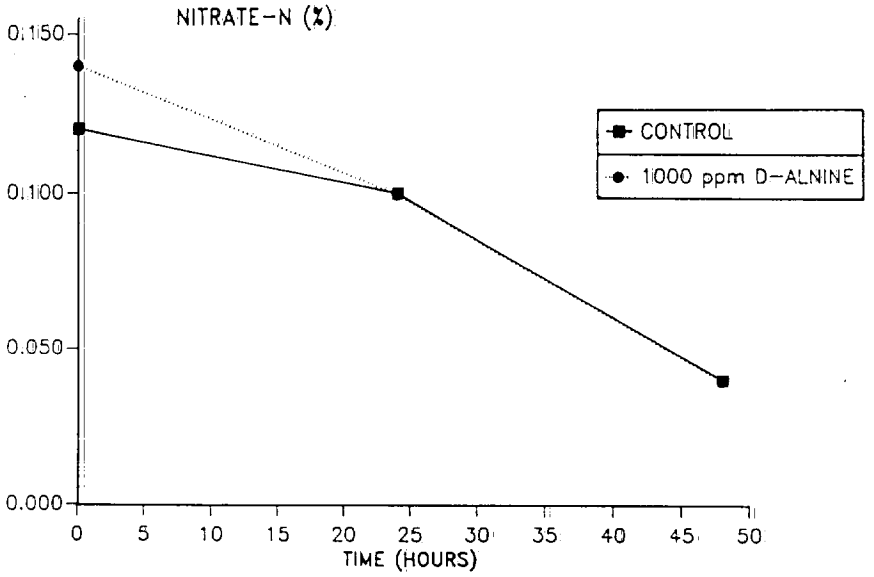

Figure 8 EFFECT OF D-ALANINE IN PARK 500 SEL
Bioreactor experiment

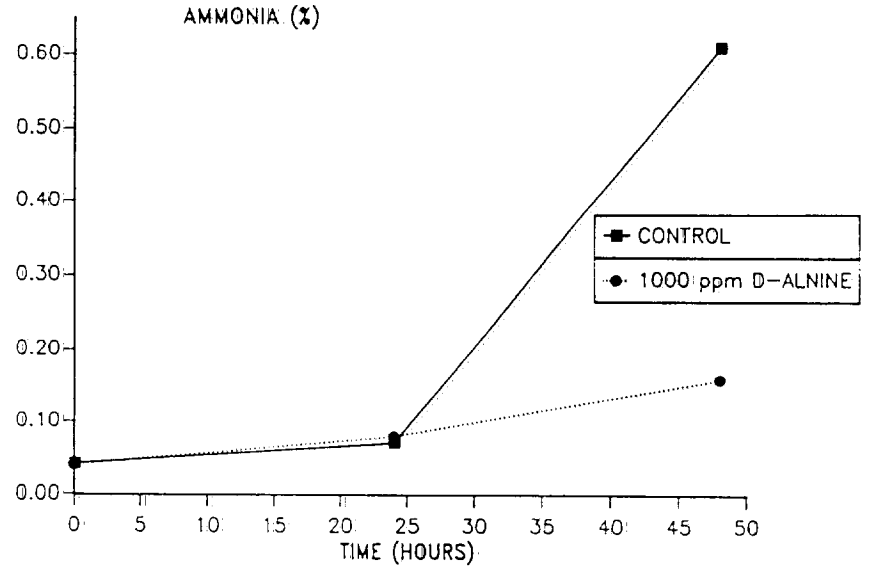

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Figure 9

EFFECT OF D-ALANINE IN PARK 500 SEL
Bioreactor experiment

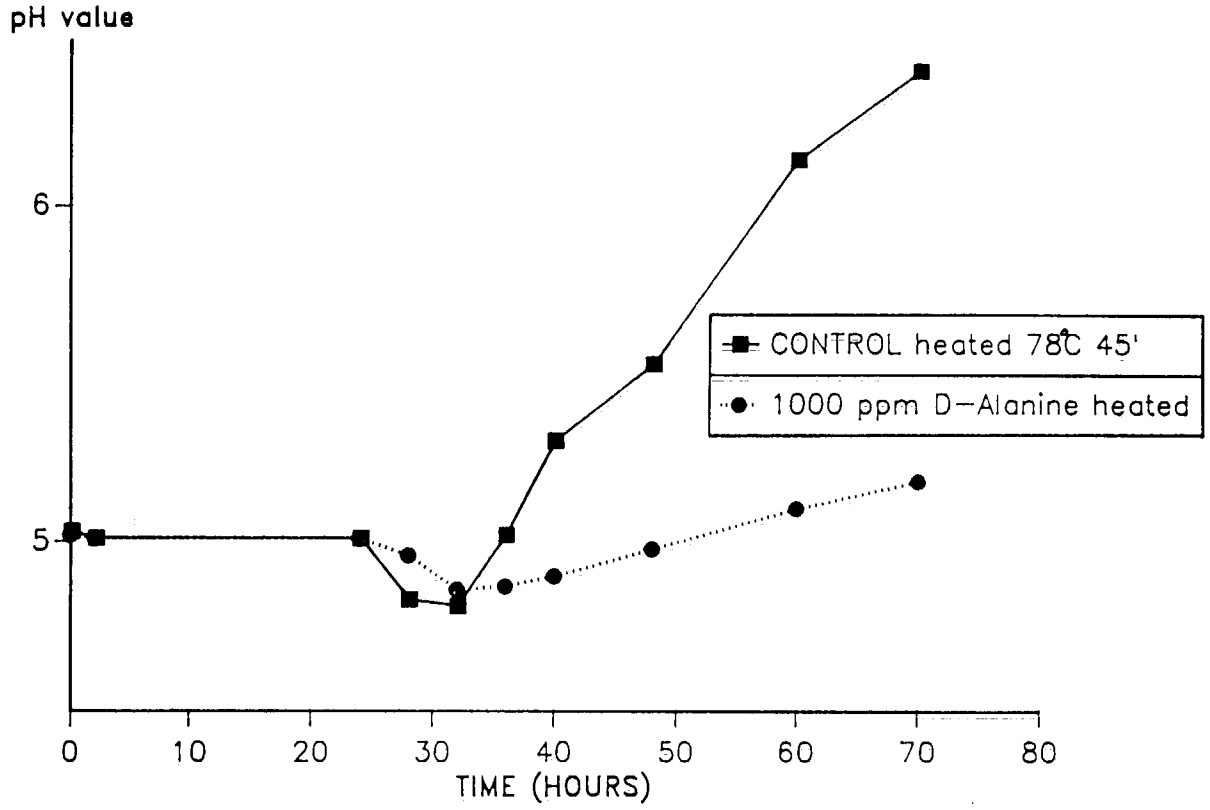

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Figure 10 EFFECT OF D-ALANINE IN PARK 500 SEL
flask experiment

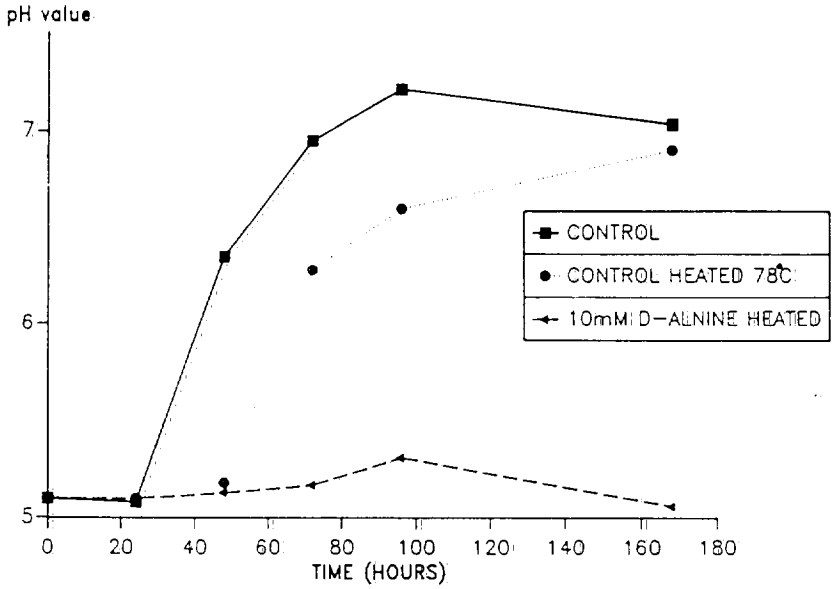

Figure 11 EFFECT OF D-ALANINE IN PARK 500 SEL
flask experiment

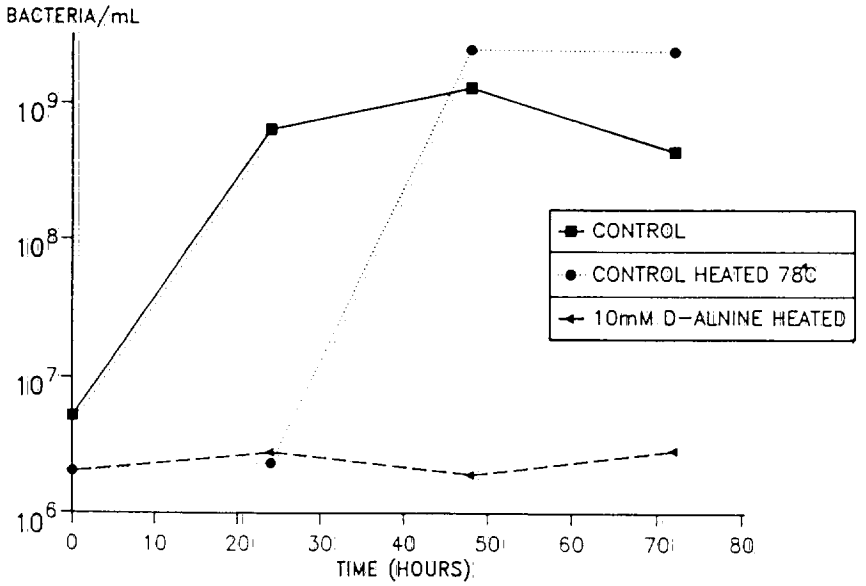

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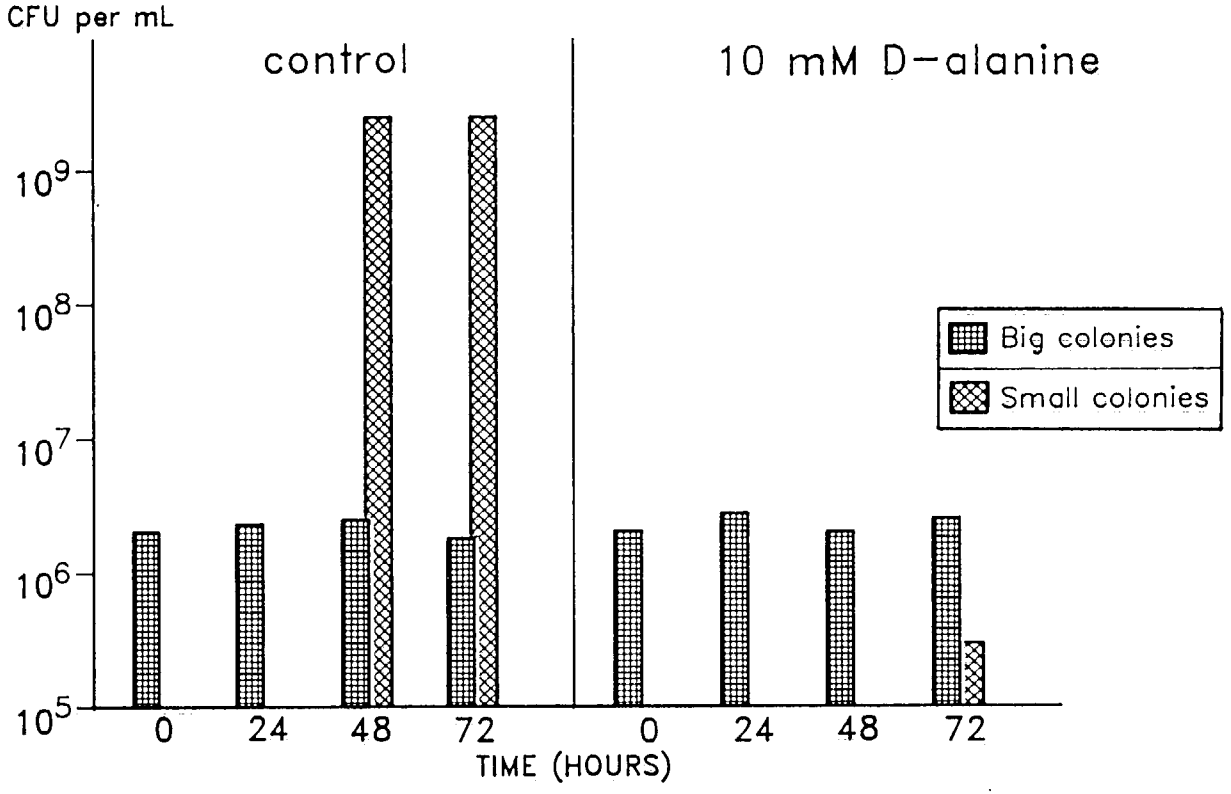
Figure 12

EFFECT OF D-ALANINE ON DIFFERENT CLASSES OF BACTERIA IN SEL
Versions heated at 78°C for 30 minutes



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RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

DIVISION : RESEARCH

SUBJECT TITLE : PESTICIDES

PERIOD COVERED : OCTOBER - DECEMBER 1988

WRITTEN BY : Amati-D. (DAA)

KEYWORDS : culture, moon, methoprene, tla, maleic-hydrazide, mh-30, dithiocarbamate, dtc, carboxylic-acid, 2,4-d, 2,4,5-t, dicamba, screening

---

OBJECTIVES

To provide an analytical service for the analysis of pesticides in tobacco and cigarette filler.

To develop analytical methods for new pesticides and to improve existing methods.

RESULTS

PROJECT CULTURE

Pesticide routine analysis

As mentioned previously [1], dimefox losses occurred during the concentration steps of the GPC method for the organophosphorous pesticides. By the application of a Kuderna Danish apparatus these losses can be avoided and a determination of the organo-phosphorous pesticides together with the pesticides already determined with the GPC method will be possible.

Carboxylic acids

A method for the determination of the herbicides 2,4-D, 2,4,5-T and dicamba in filler was established. A description of the method is in preparation. The determination of the 3 herbicides will be included in the quarterly check of PMG products.

Pesticide screening

Experiments were performed for a screening procedure for organo-phosphorous pesticide residues [2]. The detection principle is

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based on an enzymatic reaction which is inhibited by the presence of organophosphorous pesticides. The sensitivity of the reaction is between 1 and 1000 ng per pesticide.
Preliminary tests showed that the method works if pure pesticides are applied on the plate. The sensitivity of the method and interference problems with tobacco extracts have to be studied in more detail.

Methoprene

Five tobacco dust samples from trials with Dianex at FTR production center were analysed for methoprene. Residues found ranged between 2.8 and 27.9 ppm [3,4].

Offer samples

At the request of Leaf department EEC, 20 offer samples (TU-BU) were analysed for dithiocarbamates (DTC). Nineteen samples had DTC residues below the recommended value of 50 ppm set by the German regulation and one sample had 56.2 ppm [5].

Maleic hydrazide

Sixteen PMH-TLA samples and 6 FTR-TLA samples were analysed for MH-30 [6,7,8]. Five PMH-TLA samples and 1 FTR-TLA sample contained MH-30 residues slightly above the 80 ppm recommended level (Table 1).

Belgian, Swiss, Italian and English cigarette brands were bought on the respective markets in 1988 and were analysed for MH-30. Results are listed in Tables 2,3,4 and 5 and shown in Figs. 1,2,3 and 4 respectively.

PROJECT MOON

PMG-TLA samples and PMG-brands

As an anlytical service for PMG, 112 TLA samples and 8 PMG brands were analysed for pesticide residues [9,10,11]. In 29 TLA samples, MH-30 residues exceeded the maximum recommended level of 80 ppm.
In the PMG brands no pesticide residues above the German tolerances were found. A decrease of DTC residues was observed for all brands except for MYO.

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MH-30 survey of DB-brands, December 88

In comparison to the last survey of June 88, an increase of the MH-30 residues was observed for HB, Camel and West (Fig. 5).

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[5] Memo from Amati-D. to Speck-M., December 21, 1988.
[6] Memo from Amati-D. to Babey-J., November 28, 1988.
[7] Memo from Amati-D. to Babey-J., November 28, 1988.
[8] Memo from Amati-D. to Babey-J., December 21, 1988.
[9] Memo from Speck-M. to Probst-K., October 4, 1988.
[10] Memo from Amati-D. to Probst-K., December 5, 1988.
[11] Memo from Amati-D. to Probst-K., December 21, 1988.

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

Table 1 : MH-30 RESIDUES IN PMH-TLA AND FTR-TLA SAMPLES EXCEEDING THE 80 ppm RECOMMENDED VALUE

Lot	CY	Origin	MH-30 (ppm)
3095	86	US	92.0
6074	87	US	240.7
6075	87	US	208.9
6076	87	US	244.1
6077	87	US	218.0
6078	87	US	159.5

Table 2 : MH-30 IN BELGIAN BRANDS, 1988

Brand	Company	MH-30 (ppm)
Marlboro	PM	38.3
Marlboro Lights	PM	33.5
L+M	PM	28.4
Belga Filtre	Vander Elst/Rothmans	22.7
Bastos Filtre	Cinta/REE	39.7
Gauloises Filtre	Cinta/REE	n.d.
St. Michel, NF	Gosset	n.d.
Richmond	Jubile	18.2
Boule d'Or	Odon Warland/BAT	12.8
Barclay	Odon Warland/BAT	63.9
Johnson	Jubile/Rothmans	n.d.
P. Stuyvesant	Jubile/Rothmans	12.5
Camel	Gosset/RJR	33.2
Kent	Landewijck	6.8

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

Table 3 : MH-30 IN SWISS BRANDS, 1988

Brand	Company	MH-30 (ppm)
Marlboro	PM	44.8
Muratti Ambassador	PM	23.0
Brunette DF	PM	24.7
Camel Mild	RJR	41.4
Barclay	BAT	29.2
Marylong	BAT	23.0
Marylong Ex.	BAT	12.2
Select	BUR	20.2
Select Mild	BUR	27.2
Parisienne	BUR	22.7
Gauloises F	RIN	n.d.

Table 4 : MH-30 IN ITALIAN BRANDS, 1988

Brand	Company	MH-30 (ppm)
Marlboro	PM	34.9
Merit	PM	41.1
Diana	PM	33.2
Multifilter	PM	22.7
Muratti Ambassador	PM	28.1
MS	MTI	20.2
MS Mild	MTI	25.8
N 80	MTI	n.d.
Futura	MTI	11.4
MS Blu	MTI	28.1
Kim	BAT	20.7
Camel	RJR	20.4
Milde Sorte	AU	15.9
R6 International	REE	19.0

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

Table 5 : MH-30 IN UK BRANDS, 1988

Brand	Company	MH-30 (ppm)
Marlboro	PM	40.3
Benson & Hedges	Gallaher	26.4
Berkeley Super Kings	Gallaher	11.4
Silk Cut KS	Gallaher	21.3
Regal KS	WD MO Will	10.2
JPS Super Kings LT	Imperial Tob.	10.2
John Player Special	Imperial Tob.	7.7
Lambert & Butler	Imperial Tob.	n.d.
Embassy Number 1	Imperial Tob.	14.2
Raffles	PM	33.2
Rothmans KS	RJR	8.8
Dorchester	RJR	14.2

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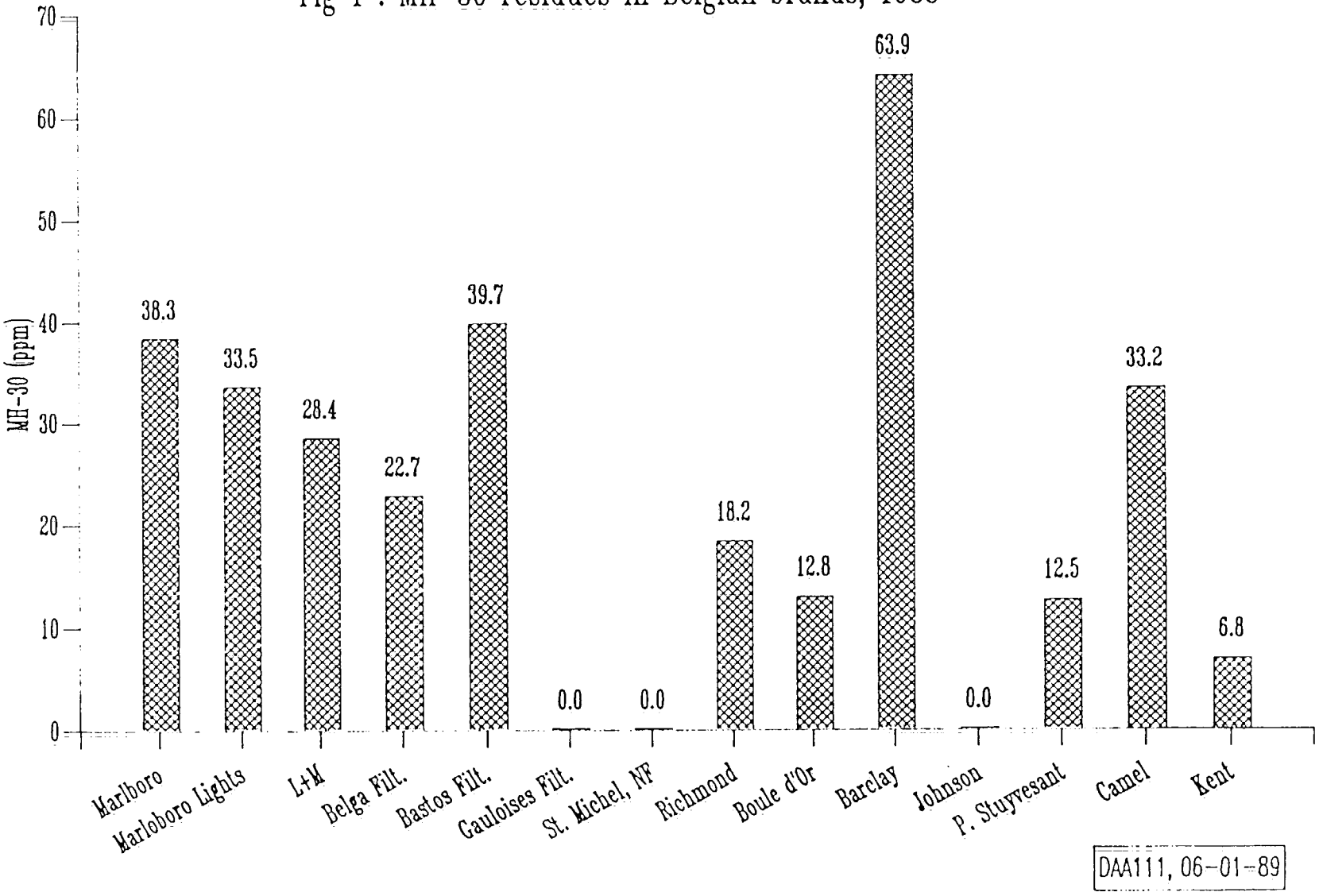
Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

Fig 1 : MH-30 residues in Belgian brands, 1988



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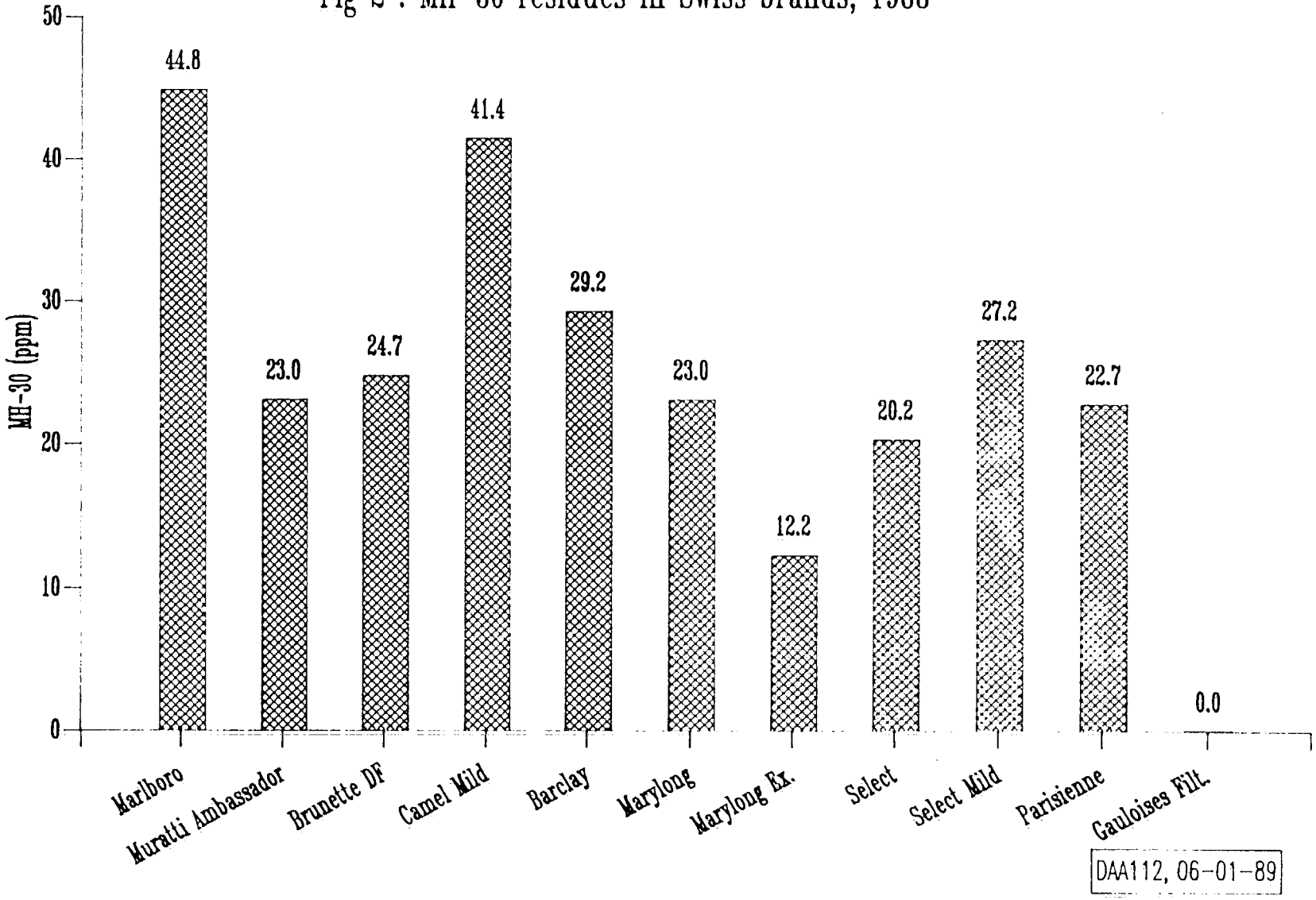
Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

Fig 2 : MH-30 residues in Swiss brands, 1988



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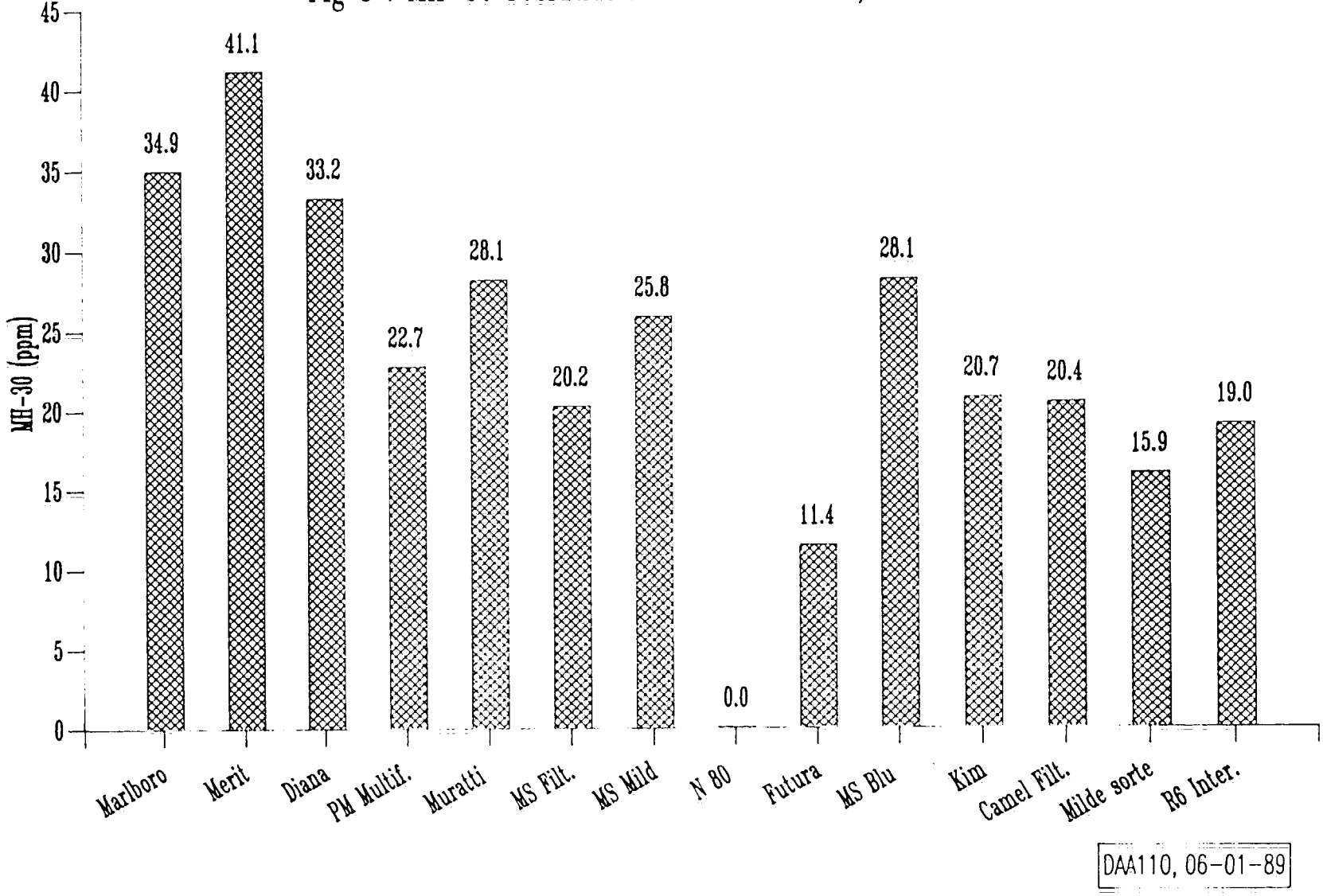
Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

Fig 3 : MH-30 residues in Italian brands, 1988



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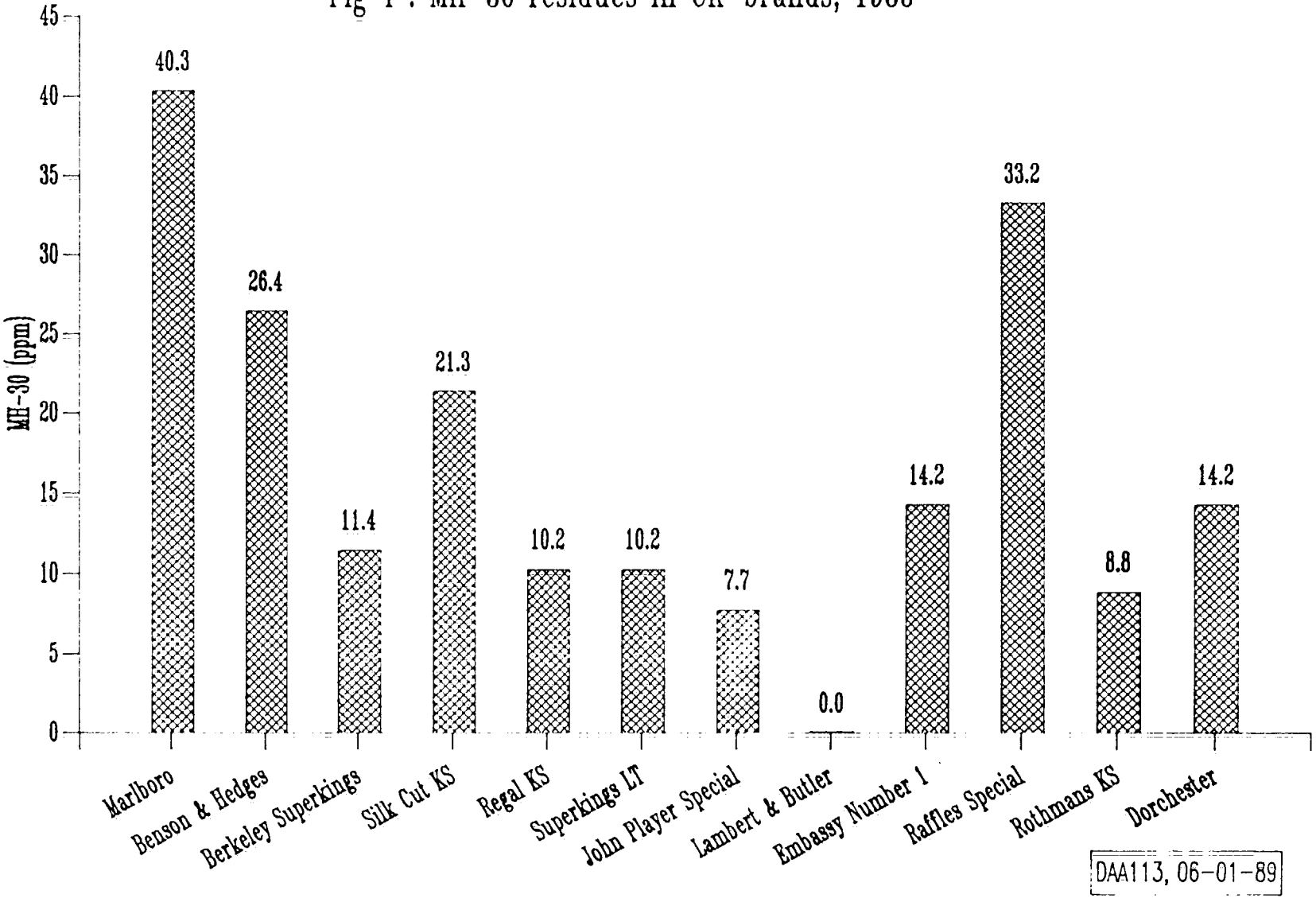
Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

Fig 4 : MH-30 residues in UK-brands, 1988



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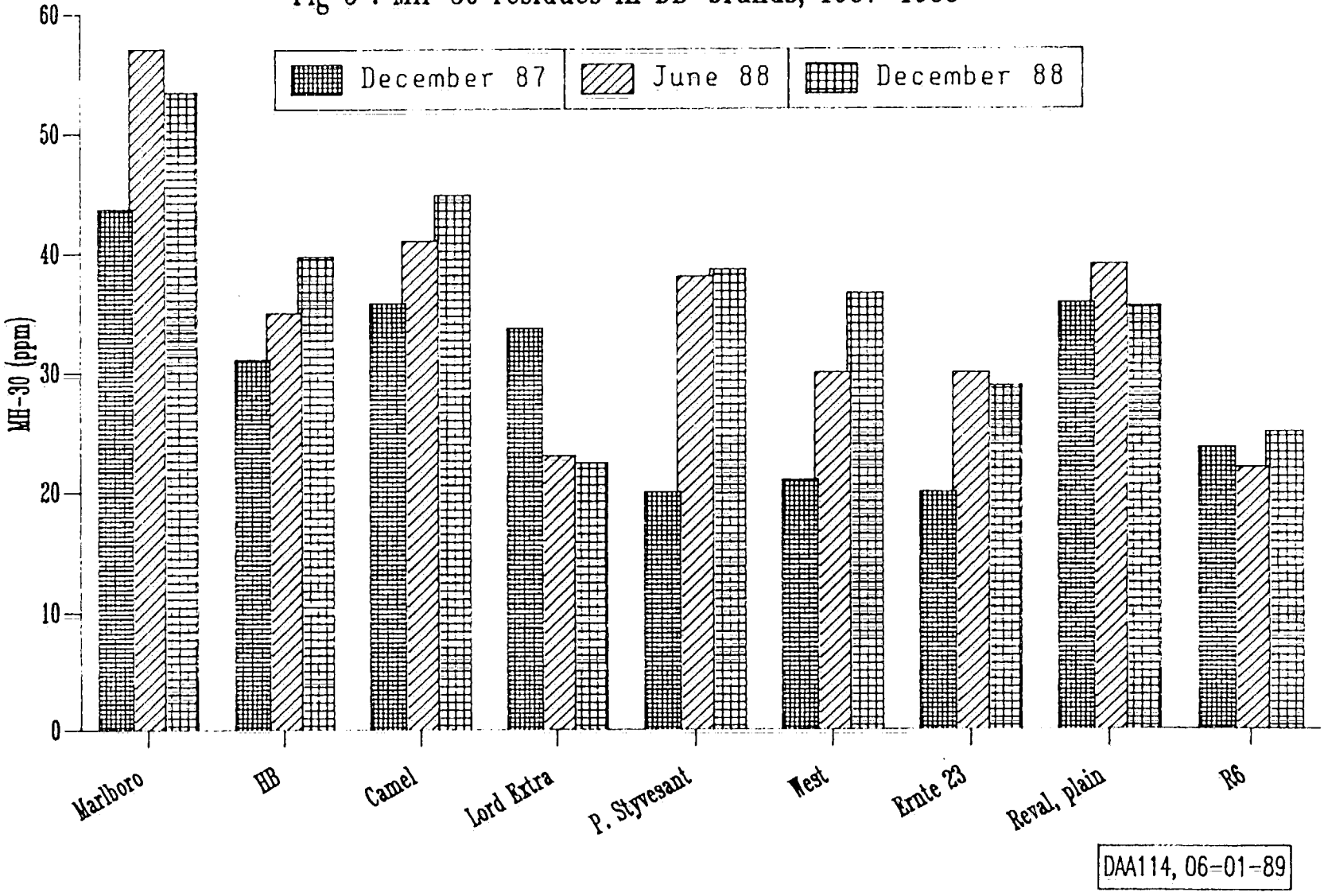
Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

Fig 5 : MH-30 residues in DB-brands, 1987-1988



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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

DIVISION : RESEARCH

SUBJECT TITLE : ARCHIVE

PERIOD COVERED : JULY - DECEMBER 1988

WRITTEN BY : Genoud-Y. (YVG), Murray-M. (MUM)

KEYWORDS : oriental, tobacco, process, treatment, organoleptic, subjective, cigarette

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OBJECTIVE
==========

To reduce the amount of Oriental tobacco in a typical American blend without changing organoleptic and smoke delivery parameters.

RESULTS
=======

Currently, Oriental tobacco is humidified together with other tobaccos using steam and reduced pressure. This process is assumed to remove a large amount of Oriental taste components. A milder treatment should retain more Oriental character and reduce the amount of Oriental needed in the blend.

Four blends were produced in the mini primary without using the vacuum chamber treated Oriental tobacco. The Oriental tobacco was steam treated and left to stabilize for 12 hours. The maximum temperature reached by the tobacco was 30°C. The blends contained 100%, 75%, 50% and 25% of the Oriental tobacco used in the MLF reference blend. The reference MLF blend was produced with the same batches of tobacco used in the trials. To maintain the same percentage of other tobaccos in each blend, Oriental was replaced by corresponding amounts of a neutral tobacco. The normal amount of flavors was applied to all prototypes.

The cigarettes produced with the 4 blends were compared with the reference by a difference panel smoking blind. The cigarettes were also analysed for smoke delivery figures by the smoking laboratory. The panel could not detect any difference between the test cigarettes and the reference at any level of Oriental tobacco.

Smoking by an expert panel was inconclusive and the preparation of 100% Orient prototypes was requested.

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

PLANS
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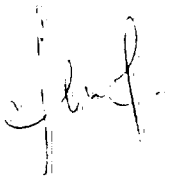
To investigate the effect of low temperature treatment. Prototypes will be prepared with reduced amounts of Oriental tobacco and with 100% Oriental tobacco treated at different temperatures.



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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

DIVISION : RESEARCH

SUBJECT TITLE : CF-SURVEY

PERIOD COVERED : OCTOBER - DECEMBER 1988

WRITTEN BY : Renaud-J.-M. (JMR)

KEYWORDS : cf, cf-survey, eec, eema

OBJECTIVE
==========

To perform a regular survey on the use of CF in brands of the EEC and EEMA regions.

RESULTS
=======

The CF-survey was performed on leading brands, plus Camel and Winston, bought in 1988 on the market of 30 different countries [1]. 367 brands were analysed altogether.

EEC region

117 brands were analysed. CF was detected in 8 brands in amounts from 5 to 34 ppm. As compared to 1987 survey, no change was observed.

EEMA region

226 brands were analysed. CF was detected in 59 brands in amounts from 3 to 53 ppm. The values found in 1988 are in line with the values of previous surveys. CF was removed from 7 brands : Gold Coast (Bahrain); Camel 80/F, Salem Light Menthol and Winston (Sweden); Camel Light, Camel Mild and Dunhill Special Light (Switzerland).

Portugal and Spain

Twenty-four brands were analysed. After 1986 CF was found again in 2 brands sold in Portugal (CT and Provisorios). The amounts are comparable with those of 1986.

Results are summarized in Tables 1 to 3.

REFERENCE
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[1] Renaud-J.-M., Report CF-Survey 1988, December 8, 1988.

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

TABLE 1 : CF DETERMINATION BY BRAND/COUNTRY

COUNTRY	Nb. OF BRANDS ANALYSED	Nb. OF BRANDS CONTAINING CF	CONCENTRATION RANGE (ppm)
REGION EEC			
Austria	11	-	-
Belgium	10	-	-
France	11	-	-
Germany West	14	-	-
Greece	12	1	13
Israel	11	3	5 - 34
Italy	12	1	22
Malta	12	-	-
Netherlands	11	3	11 - 29
United Kingdom	13	-	-
REGION EEMA			
Algeria	6	1	18
Bahrain	11	-	-
Czechoslovakia	9	4	7 - 21
Denmark	10	6	9 - 19
Dubai	11	3	5 - 15
Egypt	10	4	9 - 39
Finland	11	2	7 - 12
Hungary	8	-	-
Morocco	10	2	3 - 6
Norway	14	11	3 - 31
Oman	11	2	3 - 25
Saudi Arabia	13	2	11 - 27
South Africa	10	2	19 - 44
Sweden	17	13	4 - 53
Switzerland	45	7	6 - 31
Tunisia	10	-	-
Turkey	12	-	-
Yugoslavia	8	-	-
Other			
Portugal	13	2	6 - 12
Spain	11	-	-

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

TABLE 2 : CF IN FILLER OF CIGARETTES FROM EEC REGION, SUMMARY 1983 TO 1988

Only brands listed where CF was found in the years 1983 to 1988

COUNTRY	BRAND NAME	SIZE	CF (ppm) 1983	1985	1986	1987	1988
Belgium	Kent	80/F	*	3	nd	*	*
France	Camel	79/F	*	*	*	*	nd
	Camel Mild	84/F	20	25	nd	*	nd
	Winston	79/F	*	*	*	*	nd
	Winston Light	80/F	*	2	nd	*	nd
Germany West	Lord Ultra	84/F	*	27	23	nd	nd
	SL	84/F	*	23	22	nd	nd
	R1	84/F	*	6	nd	nd	nd
Greece	Oscar	100/F	*	*	12	11	13
	Vantage	84/F	14	19	nd	nd	nd
Israël	Broadway	80/F	*	*	26	25	22
	Europa	80/F	*	*	53	38	34
	Montana Menthol	100/F	*	*	8	4	5
	Royal	80/F	*	*	2	nd	nd
Italy	Colombo	84/F	*	*	31	18	22
	R6 Ultra	84/F	*	3	6	nd	*
	Stop	80/F	*	*	1	nd	nd
	Winston	80/F	*	19	nd	nd	nd
Netherlands	Barclay	84/F	*	*	1	nd	nd
	Caballero	84/F	nd	nd	1	nd	nd
	Caballero	69/NF	*	*	14	12	16
	Mantano	69/NF	*	*	27	24	29
	Mantano	84/F	*	*	*	11	11
Portugal	CT	83/F	*	*	10	nd	12
	Provisorios	65/NF	*	*	2	nd	6

nd = not detectable, detection limit approx. 1 ppm
* = no sample received

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

TABLE 3 : **CF IN FILLER OF CIGARETTES FROM EEMA REGION, SUMMARY 1983 TO 1988**

Only brands listed where CF was found in the years 1983 to 1988

COUNTRY	BRAND NAME	SIZE	CF (ppm) 1983	1985	1986	1987	1988
Algeria	Rym	82/F	*	*	18	*	18
Bahrain	Camel	69/NF	*	*	*	23	*
	Cleopatra 100'S	99/F	*	*	*	63	*
	Gold Coast	79/F	*	*	*	21	nd
Czechoslovakia	Clea	85/F	*	*	*	*	7
	Petra	85/F	*	*	*	28	21
	Sparta	84/F	*	*	*	*	8
	Winston	79/F	*	*	*	*	7
Denmark	Look Light	100/F	*	11	17	11	13
	Look Super	100/F	*	19	21	26	19
	Prince of Blends	84/F	*	*	9	8	10
	Prince 100's	100/F	*	8	9	9	9
	Prince Light	84/F	*	*	7	8	10
	Prince Light 100's	100/F	*	*	*	*	10
Dubai	Charms	84/F	*	*	*	*	4
	Cleopatra Luxe	98/F	*	*	*	*	15
	Wills	83/F	*	*	*	*	5
Egypt	Belmont 100'S	98/F	*	*	*	15	35
	Cleopatra King Size	85/F	*	*	10	39	20
	Cleopatra Light	84/F	*	*	*	9	*
	Cleopatra 100's	100/F	*	*	17	36	34
	Cleopatra Luxe	100/F	*	*	31	30	9
Finland	Colt International	80/F	*	7	4	*	7
	Colt Kings	84/F	9	5	nd	*	*
	Colt Light	80/F	13	14	13	*	12
	Colt Long Size	80/F	*	7	nd	*	*
	Kent	80/F	10	5	nd	*	nd

nd = not detectable, detection limit approx. 1 ppm
* = no sample received

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

TABLE 3 : CF IN FILLER OF CIGARETTES FROM EEMA REGION, SUMMARY 1983 TO 1988 (contd)

Only brands listed where CF was found in the years 1983 to 1988

COUNTRY	BRAND NAME	SIZE	CF (ppm) 1983	1985	1986	1987	1988
Kuwait	Cleopatra Light	84/F	*	*	*	5	*
	Cleopatra Luxe	98/F	*	*	*	33	*
	Cleopatra 100'S	99/F	*	*	*	43	*
Morocco	Best King Size	80/F	*	*	*	*	3
	Koutoubia	80/F	*	6	*	*	6
Norway	Biltmore Light	84/F	*	*	*	*	3
	Biltmore Full Flavor	84/F	*	*	*	*	5
	Blend	85/F	*	8	7	*	*
	Camel	69/NF	*	*	*	13	31
	Camel	80/F	*	*	3	nd	nd
	Dunhill	84/F	*	*	*	7	6
	Dunhill Special Light	85/F	*	6	6	9	*
	Dunhill Superior Light	84/F	*	*	*	*	11
	Montana	84/F	*	19	20	17	*
	Pall Mall	84/F	*	10	15	13	21
	Pall Mall	84/NF	*	*	18	16	18
	Pall Mall Extra Mild	84/F	*	15	18	14	16
	Pall Mall Mild	84/F	*	15	17	14	15
	Prince of Blends	84/F	*	6	8	8	10
	Prince Mild	84/F	*	6	8	9	10
	Winston	80/F	*	*	20	*	*
Oman	Charms	83/F	*	*	*	*	3
	Cleopatra	84/F	*	*	*	*	25
Saudi Arabia	Carlton 100's	100/F	*	2	*	*	*
	Cleopatra	100/F	*	*	28	*	27
	Cleopatra Lights	84/F	*	*	*	*	11
South Africa	Camel	84/F	*	4	nd	*	*
	Gold Dollar	84/F	*	*	70	*	*
	Gunston	80/F	*	26	40	*	44
	Lexington	80/F	*	19	14	*	19
	Revere	84/F	*	*	13	*	*

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

TABLE 3 : CF IN FILLER OF CIGARETTES FROM EEMA REGION, SUMMARY 1983 TO 1988 (contd)

Only brands listed where CF was found in the years 1983 to 1988

COUNTRY	BRAND NAME	SIZE	CF (ppm) 1983	1985	1986	1987	1988
Sweden	Blend	80/F	7	6	7	9	10
	Blend Extra	80/F	20	19	23	29	28
	Blend Menthol	80/F	*	*	7	8	11
	Blend Ultra	80/F	40	45	52	45	53
	Blend Ultra Menthol	80/F	*	*	42	50	53
	Camel	80/F	*	*	2	1	nd
	Camel	69/NF	*	*	26	21	25
	Commerce	67/F	*	*	3	2	5
	Commerce	67/NF	*	*	3	1	5
	Commerce Light	67/F	*	*	3	1	4
	John Silver	84/F	*	*	3	3	4
	Prince of Blends	84/F	8	6	6	7	8
	Prince (box)	80/F	*	*	*	*	6
	Prince Light	84/F	*	5	7	7	8
	Salem Light Menthol	80/F	*	*	30	24	nd
	Winston	80/F	*	*	3	11	nd
Switzerland	Camel	69/NF	*	*	*	26	31
	Camel	80/F	*	18	22	21	21
	Camel	84/F	*	23	31	26	23
	Camel Double Filtre	80/F	*	21	24	22	17
	Camel Light	80/F	7	7	9	*	nd
	Camel Mild	80/F	nd	10	5	2	nd
	Dunhill Special Light	84/F	*	*	8	7	nd
	Gallant	84/F	16	9	*	nd	nd
	Gallant Trend	84/F	*	12	nd	nd	nd
	HB	84/F	*	20	nd	nd	nd
	Peter Stuyvesant Ultra	84/F	*	*	5	3	6
	Select Mild Aroma	84/F	*	22	27	18	24
	Winston	84/F	*	22	28	24	28
United Arab Emirates	Camel	69/NF	*	*	*	28	*
	Cleopatra 100'S	98/F	*	*	*	114	*

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RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

DIVISION : RESEARCH

SUBJECT TITLE : DEIMOS

PERIOD COVERED : OCTOBER - DECEMBER 1988

WRITTEN BY : Bindler-G.N. (GNB)

KEYWORDS : ss, single-cigarette, collection-flask, flow-rate

OBJECTIVE

Develop and evaluate the methodology for single cigarette routine determination of sidestream smoke TPM, nicotine and CO yields.

STATUS

Equipment

A sidestream smoke (SS) collection system based on a four-port Borgwald smoking machine has been designed and developed with the collaboration of the technical department. This SS collection set-up will be operational end of January.

CORESTA Task Force studies

Additional work was done in the context of the CORESTA ETS/SS Task Force. The influence of flow rate on the MS and SS yields and cigarette static burning rate was determined for several SS collection systems.
The study was carried out using the 1R4F Kentucky reference cigarette. The various collection systems investigated included the open "fishtail" collection chamber designed by BAT [1] and the same BAT chamber fitted with a deflector under the cigarette. The air-flow through the chambers varied between 1 and 5 standard liters per minute (slpm).
Results were presented at the Task Force meeting in Geneva, on December 5, and an internal report was issued [2]. The following conclusions were made :
The original design of the BAT chamber, which provides a very narrow body, allows an efficient clearing of the SS smoke from the burning cigarette at relatively low flow rates (- 2 slpm). This is a prerequisite for maintaining the MS yields at their free-smoking value. The air velocity around the cigarette is however very high and the smoking is not performed according to

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the ISO norm [3] even when operating at low flow rates (2 slpm) where losses of smoke through the opening underneath the flask becomes a problem. The static burning rate is also significantly altered. The use of a deflector that directs the air flow away from the cigarette is a possible way to obviate these problems.

PLANS

- Set up and test the new 4-port smoking equipment.
- Subcontract a study of the distribution of air velocities in the SS collection chamber by computer flow modelling in order to optimize its geometry.
- Continue work on chamber design within the CORESTA Task Force.

REFERENCES

[1] Proctor-C.J., Martin-C., Beven-J.L. and Dymond-H.F., Evaluation of an apparatus designed for the collection of sidestream tobacco smoke, Analyst 113 (1988), 1509-13.
[2] Bindler-G.N. and Piadé-J.J., Effects of flow rate within a SS collection device, December 2, 1988.
[3] Tobacco and tobacco products - Routine analytical cigarette smoking machine - Definitions, standard conditions and auxiliary equipment, ISO 3308 2nd Ed. 1986.

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

DIVISION : RESEARCH

SUBJECT TITLE : HYDRA, ETS

PERIOD COVERED : OCTOBER - DECEMBER 1988

WRITTEN BY : Gerber-C. (CAG)

KEYWORDS : ets, rsp, nicotine, solanesol, sfc, tno, mek

PROJECT HYDRA

OBJECTIVE

Obtain an analytical data-base on ETS through indoor air monitoring experiments.

STATUS

Methods

Solanesol analysis

The quantitative determination of solanesol in respirable suspended particles (RSP) using supercritical fluid chromatography (SFC) was investigated. Since the conditions are very mild, a sharp symetrical peak can be obtained from the compound without the derivatization step which is needed when using high temperature capillary GC. Sample preparation is thus reduced to a minimum. The problem of finding a suitable internal standard also becomes much more simple. In addition, one can envisage performing on-line supercritical extraction followed by SFC quantification. Further refinements are needed in order to increase the sensitivity of the method and bring the detection limit below 250 ng per filter.

PROJECT ETS

OBJECTIVE

Support S&T in the organization of sub-contracted studies on ETS. Test analytical methods through collaborative studies with external laboratories.

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RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

STATUS

A collaborative study was initiated with TNO in order to introduce them to the UV method for estimating the ETS contribution to total particulate matter (UV-PM).

Samples were prepared to participate in a collaborative study on the analysis of RSP and nicotine in air, which is organized by RJR in the context of the CORESTA SS/ETS Task Force.

SUPPORT TO OTHER GROUPS

Following the request of FTR Security department, some air analyses in the work-place have been performed to determine the RSP level (mainly tobacco dust) in selected locations in Onnens. A report was issued [1].
The analysis of air within the production area in places where methyl ethyl ketone (MEK) is used as an ink solvent (Ink Jet V15) was also requested by FTR Security department. A method to determine MEK in air at the ppm level has been developed following the method by Elskamp et al. [2], and its applicability to field samples has been verified [3].

PLANS

- Support will be given to S&T for field samplings and for further co-operation with external laboratories.
- The SFC technique for solanesol analysis will be applied to "real life" samples.
- Work will be continued on the determination of trace amounts of volatile organic compounds, including benzene, in indoor air.
- In-house air analyses will be performed as requested, i.e. MEK monitoring, tobacco dust monitoring and analysis of air exhausted from the smoking lab.

REFERENCES

[1] Memo from Gerber-C.to Kaspar-A.M., Analyses de poussières à Onnens, December 16, 1988.
[2] Elskamp-C.J. and Schultz-G.R., Am. Ind. Hyg. Ass. J., 44 (3), 201-204, (1983).
[3] Gerber-C. PME analytical method, "Analysis of methylethylketone (MEK) in air", January 10, 1989.

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C. Gerber

Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

DIVISION : RESEARCH

SUBJECT TITLE : NEPTUNE

PERIOD COVERED : OCTOBER - DECEMBER 1988

WRITTEN BY : Pestlin-S. (SAP)

KEYWORDS : filler-nitrate-concentration, method-development, benzene

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OBJECTIVE
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To perform sidestream smoke (SS) analyses of prototypes and/or commercial cigarettes as analytical support for Product Development PME, PM-US, and on special request.

RESULTS
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Room SS analyses

As support for an external project four prototypes and a reference cigarette (2R1F) were smoked and analysed for SS yields. The four prototypes were prepared from an identical blend with various concentrations of nitrate in the reconstituted tobacco portion.
The results are listed in Table 1.

The only SS parameters influenced by changes in filler nitrate concentrations are the nitrosamines, DMNA and NNK. Their concentrations increase, as expected, with increasing filler nitrate.
The SS NO concentration is hardly affected by any changes in filler nitrate concentration, although the one for the mainstream smoke increases with increasing filler nitrate concentrations.

Method development

Based on an already existing method for benzene in air [1], a $HS\text{-}GC^2$ method was developed, which allows the determination of benzene in sidestream smoke.
For the German C20 reference cigarette, approximately 600 ug benzene per cigarette were found.

REFERENCE
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[1] Krebserzeugende Arbeitsstoffe, Anerkannte Analysenverfahren, Carl Heymanns Verlag KG, 1983.

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

TABLE 1 : Sidestream smoke room values of prototypes and a reference cigarette (2R1F) having varying filler nitrate concentrations

		Prototypes				
Parameter	Delivery	2R1F	C11	C12	C14	C13
N-Nitrate (%)		0.19	0.05	0.11	0.23	0.41
CO	mg/puff	4.06	5.21	5.81	5.54	6.43
CO2	"	34.41	47.68	49.15	46.81	52.85
NO	"	0.14	0.18	0.19	0.23	0.23
PM	"	1.79	2.43	2.43	2.79	2.35
Nicotine	"	0.31	0.32	0.32	0.33	0.33
Formaldehyde	"	0.06	0.06	0.06	0.07	0.07
Acetaldehyde	"	0.17	0.24	0.28	0.28	0.29
HCN	"	0.02	0.03	0.02	0.01	0.02
NH3	"	0.62	0.58	0.59	0.64	0.68
DMNA	ng/puff	17.61	17.80	18.90	19.75	24.44
NNK	"	131.38	97.25	107.14	114.32	138.02

S. Pusk

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

DIVISION : RESEARCH

SUBJECT TITLE : RHEA

PERIOD COVERED : OCTOBER - DECEMBER 1988

WRITTEN BY : Pestlin-S. (SAP)

KEYWORDS : teom, gravimetric-measurement, filters, particulate-matter

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OBJECTIVE
==========

To compare the response of different instrumentation used in the determination of sidestream smoke particulate matter
a) considering the absolute values
b) considering the pattern obtained during aging of smoke.

RESULTS
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It was observed [1] that the absolute values obtained for particulate matter were much higher using a TEOM than the gravimetric measurement. Therefore, the results obtained with filters of different pore size and nature were compared. Filters investigated were a fluoropore filter (Millipore) having a pore size of 1 um and two teflon filters (Pallflex) T60A20 and TX40. While the exact pore sizes of the teflon filters are unknown, pore size of TX40 is smaller than the one of T60A20.
During the experiments the TEOM was run with the same kind of filter as the gravimetric measurement, except when using the filter from Millipore, which was only available for the gravimetric measurement. In that case the T60A20 filter was used for the TEOM.

Comparing the values obtained from gravimetric measurement, it was shown that all three filters gave about the same results when using the same smoking and sampling conditions. The same was true for the TEOM values; however, the TEOM values were about 30% higher than the corresponding values obtained from gravimetric measurement.
Even when adjusting the flow rates of the TEOM and gravimetric measurement in such a way that both should have the same filter efficiency, this discrepancy could not be eliminated. Therefore, the calibration of the TEOM will be checked.

A final report covering all experimental results will be finished beginning of March.

REFERENCE
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[1] Pestlin-S., Quarterly Report, July-September 1988, pp. 23-24.

S. Pestlin

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

DIVISION : RESEARCH

SUBJECT TITLE : PYROLYSATE REDUCTION

PERIOD COVERED : JANUARY - DECEMBER 1988

WRITTEN BY : Speck-M. (SPM)

KEYWORDS : areuse, pyrolysate, reduction, new-tar

OBJECTIVE
==========

To investigate possibilities of reducing the pyrolysate fraction of total smoke aerosol whilst maintaining a certain total smoke aerosol (TPM) and nicotine (SN) level.

STATUS
======

Since humectants and similar substances e.g. glycerine, triethylene glycol and triacetin are biologically inactive, these substances were chosen to check the possibility of increasing the neutral portion of TPM and, at the same time, reducing the pyrolysate fraction thus keeping the total TPM level constant.

In first trials, glycerine (Gly), triethylene glycol (TEG), propylene glycol, butylene glycol, triacetin (TRI) and diacetin were added in different amounts to filler which contained no additives. Gly and TEG were found to give the highest effect on pyrolysate reduction accompanied, however, by a remarkable reduction in SN.

In a follow-up experiment a cigarette having the same TPM and nicotine deliveries as RAK, but a lower pyrolysate fraction in TPM, was envisaged. To achieve this, the RAK blend was modified to have a higher TA content, and 7.5% Gly and 5.3% TEG respectively were added. With both "blends" and an appropriate cigarette construction (prototypes 28P and 45P) a pyrolysate (PYR) reduction of approx. 3.5 mg/cig. (25%) compared to RAK was obtained. Results are shown in Table 1 and Fig. 1.

The same concept was applied to ML by adding Gly in excess (additional 3% and 5% respectively) to the blend at different production steps. The smoke values of the prototypes (41P and 42P) made with these experimental blends are given in Table 2 and Fig. 2. The values are normalized to the TPM delivery of the regular MLK. Compared to MLK an 11% and 19% reduction in pyrolysate but also in SN was obtained.

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

PLANS

To repeat the ML trial with a modified, higher TA blend and an adapted cigarette construction to get the same TPM and SN deliveries as a regular MLK.

To replace Gly by TEG as done in the RAK trial.

To add solid carriers treated with Gly or TEG to filler to check if higher transfer rates can be achieved.

REMARK

The project, especially cigarette production, was performed in collaboration with Product Development PME.

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

TABLE 1 : Physical parameters and smoke values of RAK and prototypes 28P and 45P

Parameter		RAK	28P	45P
Humectant		0	7.5% Gly	5.3% TEG
Tob. weight, OV 12.5%	mg	777	925	892
Firmness as is	mm	2.62	3.61	1.92
Ventilation	%	11	36	44
RTD, cigarette	mm H2O	122	137	118
TPM	mg/cig	17.5	17.5	17.0
H2O	mg/cig	1.7	2.0	1.7
SN	mg/cig	1.13	1.16	1.19
Tar	mg/cig	14.8	14.3	14.1
TRI in TPM	mg/cig	0.7	0.5	0.5
Gly in TPM	mg/cig	0.1	3.4	--
TEG in TPM	mg/cig	--	--	3.0
Pyrolysate	mg/cig	14.0	10.4	10.6

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

TABLE 2 : Physical parameters and smoke values of MLK and prototypes 41P and 42P

Parameter		MLK	41P*	42P*
Glycerine (total)		2.5%	5.3%	7.8%
Tob. weight, OV 12.5%	mg	769	764	781
Firmness as is	mm	2.67	3.17	3.33
Ventilation	%	13	13	14
RTD, cigarette	mm H2O	104	103	111
TPM	mg/cig	19.6	19.6	19.6
H2O	mg/cig	2.2	2.8	3.1
SN	mg/cig	1.10	0.98	0.89
Tar	mg/cig	16.3	15.8	15.5
TRI in TPM	mg/cig	0.7	0.7	0.6
PG in TPM	mg/cig	0.6	0.6	0.6
Gly in TPM	mg/cig	1.3	2.3	3.2
Pyrolysate	mg/cig	13.7	12.2	11.1

* Smoke values for 41P and 42P are normalised to the TPM value of 19.6 mg/cig for MLK
Analytical values are : 20.9 mg/cig 41P
22.1 mg/cig 42P

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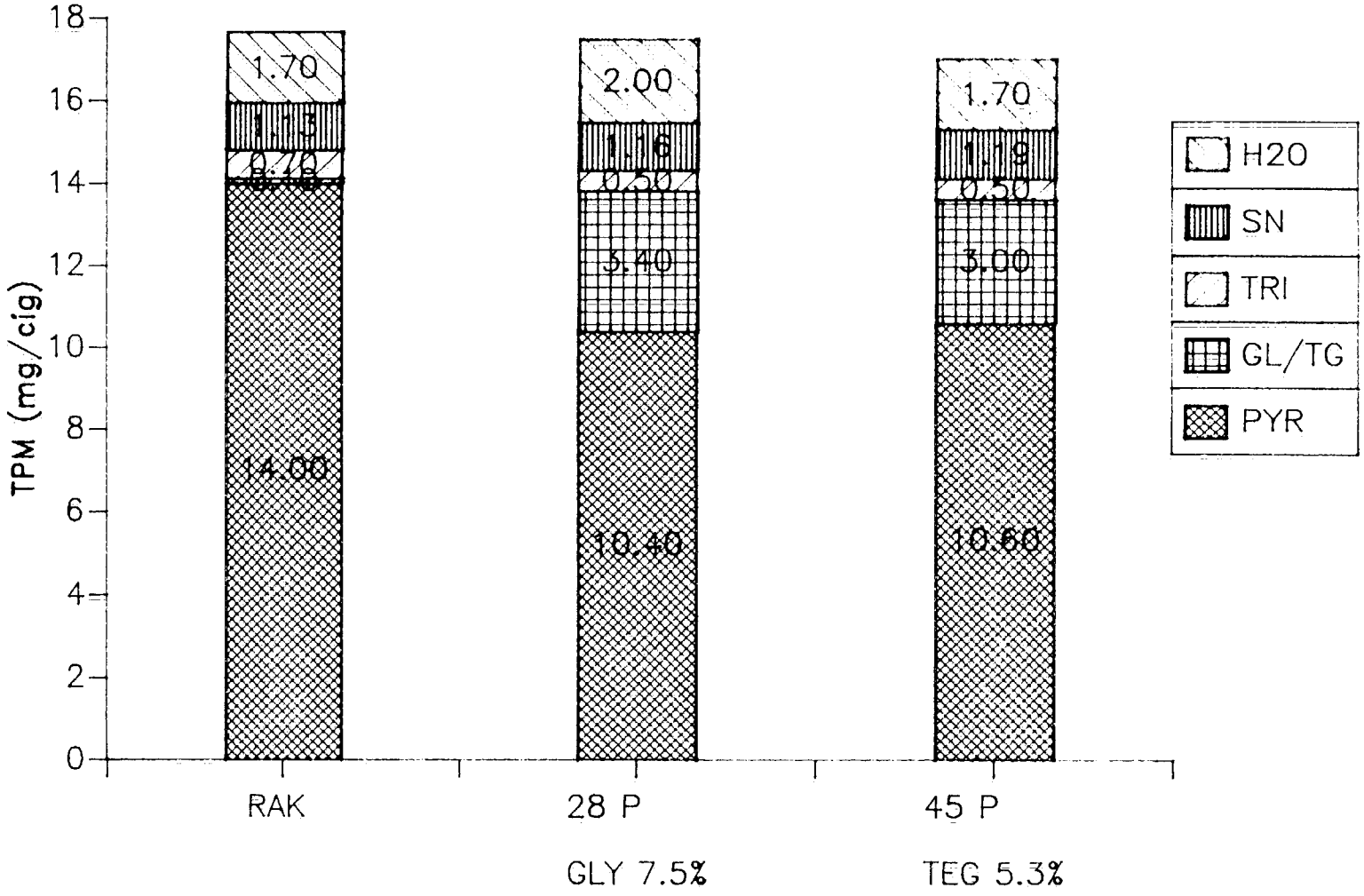
Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

FIG. 1 : Smoke values of RAK and prototypes with Gly and TEG respectively



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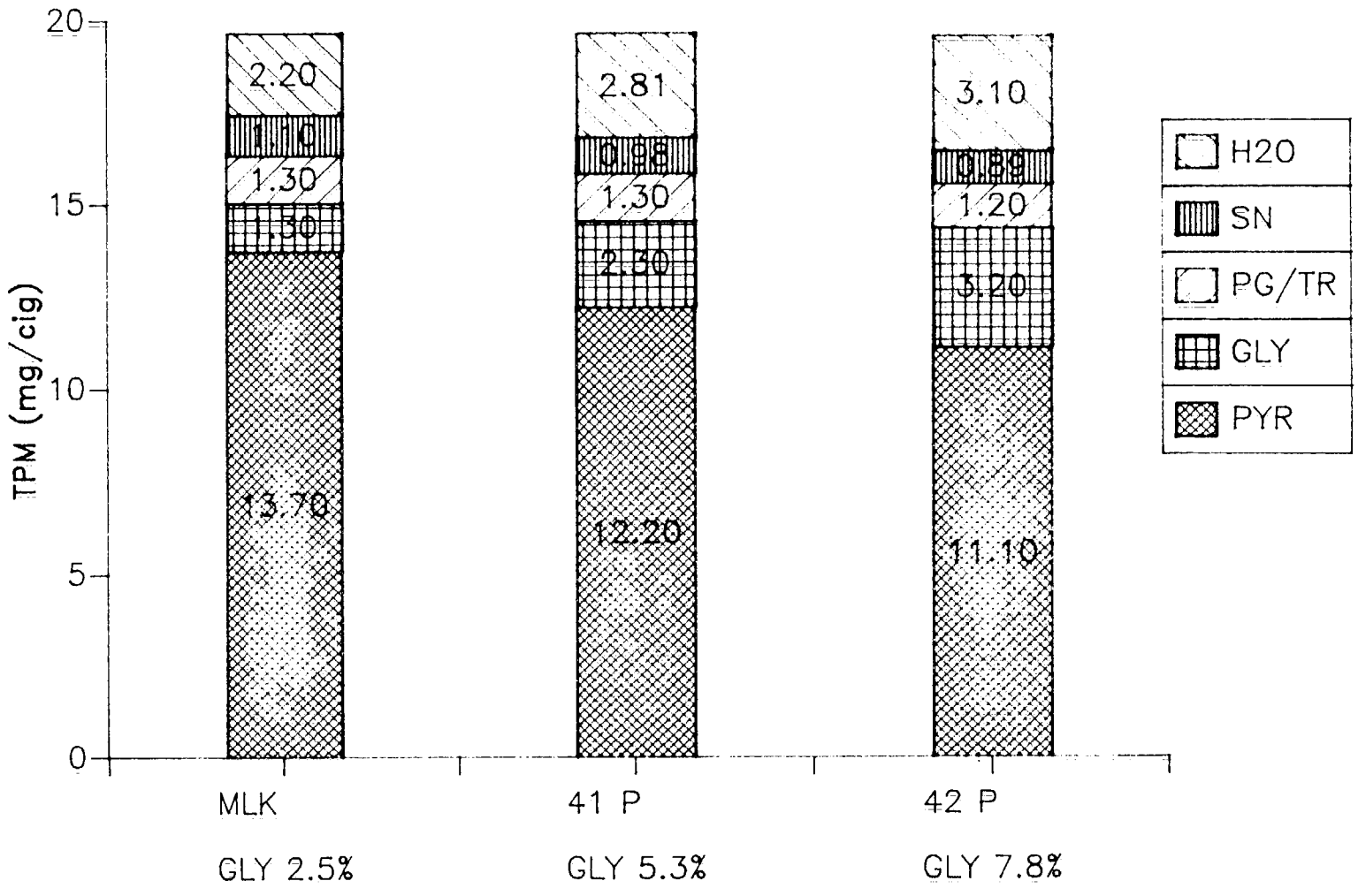
Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

FIG. 2 : Smoke values of MLK and prototypes with additional Gly



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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

DIVISION : RESEARCH

SUBJECT TITLE : NEAR INFRARED REFLECTANCE ANALYSIS (NIRA)

PERIOD COVERED : OCTOBER - DECEMBER 1988

WRITTEN BY : Moser-F. (FMO)

KEYWORDS : infraAlyzer, nira, flavor

OBJECTIVE

To evaluate Near Infrared Reflectance Analysis (NIRA) as an analytical approach towards routine quality and/or process control measurements.

STATUS

The development of the infraAlyzer method for the determination of main components in MFSB-1 flavor has been continued [1]. Several steps of water, ethanol and PG determination were improved during the validity check of the calibration of this method.

A description of the method was prepared and issued [2].

PLANS

To prepare a method for the determination of water, ethanol and sugar in MF-AC base flavor.

To check the application of infraAlyzer technique in process control.

To investigate the determination by NIRA of triacetin content of filter rods during production.

REFERENCES

[1] Moser-F., Quarterly Report NIRA, July-September 1988, pp. 28-29.
[2] Moser-F., PME Analytical method "Determination of main components in liquid flavor using Near Infrared Reflectance", January 4, 1989.

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L. Moser

Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

DIVISION : RESEARCH

SUBJECT TITLE : ORION

PERIOD COVERED : OCTOBER - DECEMBER 1988

WRITTEN BY : Pestlin-S. (SAP)

KEYWORDS : sidestream-smoke-yield, sidestream-smoke-composition, calypso

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OBJECTIVE
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To investigate the influence of filler density and cigarette paper on SS yield and composition.

RESULTS
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The five prototypes of the ORION I series (increasing filler density; WP60 cigarette paper) [1] and the ten prototypes of the ORION II series (increasing filler density; self-extinguishing and low static burning rate cigarette paper, respectively) [2] were smoked again in order to confirm the results which were obtained and discussed earlier [3,4]. The results were confirmed. Final results are listed in Tables 1, 2, 3 and 4.

A final report is in preparation and will be finished by the end of February.

PLANS
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A new project (CALYPSO) will be started and is designed to further investigate the possibilities of reducing SS yields, by varying the wrapper and its physical properties and/or varying the physical properties and appearance of cigarette prototypes.

REFERENCES
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[1] Pestlin-S., Quarterly Report, July-September 1987, pp. 32-33.
[2] Pestlin-S., Quarterly Report, April-June 1988, pp. 27-28.
[3] Pestlin-S., Quarterly Report, October-December 1987, pp. 46-51.
[4] Pestlin-S., Quarterly Report, July-September 1988, pp. 31-32.

S. Pestlin

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

TABLE 1 : Sidestream smoke room values and coal temperatures of ORION prototypes with varying densities and WP60 cigarette paper

Parameter		89P	87P	85P	83P	75C1
Density	mg/ml	200	225	250	275	300
DMNA	ng/puff	26	27	50	46	42
NAB	"	--	--	--	--	--
NAT	"	--	--	--	--	--
NNK	"	120	125	125	91	103
NNN	"	--	--	--	--	--
NH3	mg/puff	1.26	1.26	1.14	0.90	0.96
HCN	"	0.05	0.05	0.05	0.04	0.05
Acetaldehyde	"	0.33	0.34	0.30	0.30	0.24
Formaldehyde	"	0.11	0.12	0.10	0.08	0.06
Nicotine	"	0.73	0.77	0.65	0.57	0.55
NO	"	0.28	0.31	0.31	0.25	0.29
CO2	"	63.88	68.26	62.04	53.70	65.60
CO	"	6.45	6.80	6.94	5.82	6.41
Visibility (ref. 2R1 = 1)	1/puff	0.13	0.14	0.12	0.11	0.12
Dynamic coal temp.	°C	970	1008	978	961	953
Static coal temp.	"	652	652	648	638	644

-- : below detection limit

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

TABLE 2 : Sidestream smoke room values of ORION prototypes with varying densities and self-extinguishing cigarette paper (535-17P)

Parameter		105P	103P	101P	99P	97P
Density	mg/ml	200	225	250	275	300
DMNA	ng/puff	26	18	14	17	18
NAB	"	--	--	--	--	--
NAT	"	--	--	--	--	--
NNK	"	66	55	38	41	51
NNN	"	--	--	--	--	--
NH3	mg/puff	0.49	0.48	0.49	0.58	0.54
HCN	"	0.02	0.02	0.02	0.02	0.02
Acetaldehyde	"	0.15	0.16	0.16	0.18	0.16
Formaldehyde	"	0.09	0.06	0.06	0.06	0.05
Nicotine	"	0.29	0.22	0.25	0.34	0.28
NO	"	0.10	0.12	0.12	0.13	0.11
CO2	"	29.24	26.21	23.95	31.85	31.79
CO	"	2.72	3.23	2.41	2.97	2.77
Visibility (ref. 2R1 = 1)	l/puff	0.06	0.07	0.07	0.06	0.06

-- : below detection limit

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

TABLE 3 : Sidestream smoke room values of ORION prototypes with varying densities and low static burning rate cigarette paper (535-26P)

Parameter		115P	113P	111P	109P	107P
Density	mg/ml	200	225	250	275	300
DMNA	ng/puff	16	16	11	19	17
NAB	"	--	--	--	--	--
NAT	"	--	--	--	--	--
NNK	"	61	73	43	37	42
NNN	"	--	--	--	--	--
NH3	mg/puff	0.50	0.45	0.50	0.56	0.49
HCN	"	0.03	0.03	0.02	0.02	0.02
Acetaldehyde	"	0.18	0.21	0.20	0.19	0.19
Formaldehyde	"	0.08	0.07	0.07	0.06	0.06
Nicotine	"	0.27	0.29	0.25	0.24	0.24
NO	"	0.13	0.13	0.12	0.13	0.12
CO2	"	32.28	34.36	29.90	35.86	29.38
CO	"	3.49	3.42	3.36	3.32	2.98
Visibility (ref. 2R1 = 1)	1/puff	0.08	0.07	0.08	0.07	0.07

-- : below detection limit

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

TABLE 4 : Sidestream smoke room values for particulate matter of ORION prototypes

Prototype	Nb of puffs	Particulate matter	
		RAM $\frac{(\text{max.deflection})}{\text{puff}} \times 10$	TEOM (mg/puff)
075C1	5	2.01	2.32
083P	5	1.94	2.30
085P	4	1.95	2.17
087P	3	1.93	2.22
089P	3	2.19	2.39
097P	8	1.07	1.19
099P	7	1.21	1.32
101P	7	1.38	1.43
103P	6	1.40	1.49
105P	5	1.34	1.26
107P	7	1.56	1.44
109P	6	1.57	1.44
111P	6	1.59	1.59
113P	5	1.49	1.46
115P	5	1.71	1.58

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

DIVISION	:	RESEARCH
SUBJECT TITLE	:	ORDER
PERIOD COVERED	:	OCTOBER - DECEMBER 1988
WRITTEN BY	:	Murray-M. (MUM), Moser-E. (EVM)
KEYWORDS	:	regulation, db, flavor, preservative, analysis, compliance

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OBJECTIVE
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To ensure that PM produced materials and products comply with the requirements of the German Food Law.

STATUS
======

Thirteen flavor samples, 9 reconstituted tobaccos and 2 Cochise samples are being analysed for the 6th sample series of project ORDER. The R&D analyses will be completed for 31st Janaury 1989. Revised methods for the analysis of quassin, thiabendazole and cadmium were prepared.

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

DIVISION	:	RESEARCH
SUBJECT TITLE	:	PACK
PERIOD COVERED	:	OCTOBER - DECEMBER 1988
WRITTEN BY	:	Lauper-G. (GLA)
KEYWORDS	:	pack, label, cardboard, profile, ink, solvent, volatile, flavor, odor, organoleptic, sniffing, oackaging, headspace, quality

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OBJECTIVE

To determine which substances in packaging materials adversely influence cigarette taste, and establish maximum acceptance levels.

RESULTS

Following a meeting with PM-EEC Packaging Engineering, the individual and total solvent tolerances were established for gravure printed material. These tolerances are based on sensory and validation results [1,2].

PLANS

- The specifications will be established by Packaging Engineering including acceptable tolerance levels for printing solvents.
- Support will be given to printers with the analytical method for printed materials by headspace gas chromatography.

REFERENCES

[1] Lauper-G., Quarterly Report PACK, January-March 1988.
[2] Lauper-G., Quarterly Report PACK, July-September 1988.

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

DIVISION : RESEARCH

SUBJECT TITLE : SAFE-LITHO

PERIOD COVERED : OCTOBER - DECEMBER 1988

WRITTEN BY : Lauper-G. (GLA)

KEYWORDS : packaging, headspace, chromatography, sniffing, quality, ink, odor, litho-printed

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OBJECTIVE
==========

To determine which substances in litho-printed materials adversely influence cigarette taste and to improve the quality of these materials.

RESULTS
=======

In order to ensure product quality, a program was started by Packaging department EEC and R&D PME to reach a safe litho-printed product.
In the context of this program, volatile substances were analysed by GC-sniffing on litho-printed materials from two printers.
Basic products such as inks, varnishes and additives were sent by the printers to R&D for analysis.

PLANS
=====

- Analyse the raw printing materials.
- Find the source of odorous substances.
- Find a correlation between sensory and analytical results.

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

DIVISION : RESEARCH

SUBJECT TITLE : ANALYTICAL INVESTIGATIONS

PERIOD COVERED : OCTOBER - DECEMBER 1988

WRITTEN BY : Murray-M. (MUM), Genoud-Y. (YVG), Lauper-G. (GLA), Moor-Ph. (PHM), Renaud-J.M. (JMR)

KEYWORDS : label, profile, board, carton, tip, deposit, solvent, coating, off-taste, gravure, offset, aeration, migration, volatile, taste, glue, foil, gb, nl, ch, db, gr, fr, it

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PACKAGING ANALYSIS

N-methyl pyrolidone and 2-ethyl hexanol were found on MLF HL blanks from Interdruck [1,2,3] (PHM/GLA).

A further sample of aluminium foil produced in Brazil was received for analysis [4]. As with the previous sample [5] aromatic hydrocarbons were detected. The use of a better quality gliding medium was suggested [6] (PHM/GLA).

Closed loop stripping analysis (CLSA) of 4 Simcastor samples showed no difference from the reference sample [7] (GLA).

A bundle paper with a new varnish from HIFI press was compared with standard material. Both versions were similar and contained much higher amounts of 1-ethoxy-2-propanol than MLF HL blanks [8] (GLA).

Printed blanks from Rentsch (MLZ-CLA) were analysed by headspace gas chromatography (HS-GC). The principal residual solvent was 1-ethoxy-2-propanol which is normally used as a retardant. The use of smaller amounts of this solvent was suggested [9] (GLA).

New and standard latex and board samples ex Dow and Iggesund were examined. The new latex gave a board with lower odorant residues. Acceptance was recommended [10] (GLA).

Subjective evaluation of PM Filter Kings Gold packed in PMB 260 Gold showed a taste difference relative to the standard MLB 160. Analysis showed a higher residual solvent concentration on the PMB 260 bundle paper [11,12] (GLA/PHM). Further printing trials with a new ink and varnish system reduced residual solvent levels by a factor of six [13,14] (GLA).

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

During qualification tests for new boards for TAKO, residual printing solvents were analysed. The TAKO boards retained larger amounts of gravure printing solvents than the standard Iggesund board. GC-sniffing showed considerable differences between the boards. Smoking panel evaluation of the TAKO board was recommended [15,16] (GLA/PHM).

Polylaupen carried out printing trials with a target of less than 10 mg/m2 1-ethoxy-2-propanol. The target was not reached and further trials were recommended [17] (GLA).

Varnish samples from different printers were examined by CLSA. A wide variety of aromatic solvents were found. Care was suggested when changing varnishes [18] (GLA).

Increased brilliance was required on Merit HL blanks. Comparison of solvent + water-based varnish and water only varnishes showed a bad smell on the solvent + water product. Analysis showed a high ethyl acetate concentration. Acceptance of the water-based product was recommended [19] (GLA).

Analysis of MLB IT bundle paper with different levels of anti-slip additive showed that residual solvent concentration paralleled the antislip concentration. All samples were within tolerances [20,21] (GLA).

During printing trials residual solvent concentrations were requested for various material samples from Aticarta Graphia and printed inner frames were analysed [24] (GLA). The Gold printed inner frames exceeded PM toluene tolerances and on one sample the recommended ethyl acetate level. All other samples met PM tolerances [25] (GLA).

Raffles UK encountered customer complaints with a promotion including a 20 p coin attached to the cigarette packet with adhesive. Analysis showed that the acrylic adhesive transferred to the cigarette filter [27,27] (GLA/PHM).

IPACOLL / GLUE AP 430/4

This glue was analysed at the request of QA. GC-MS showed the presence of triacetin, di-isobutylphtalate and methyl paraben [28,29] (PHM).

PROJECT EUROP

At the request of Microbiology isovaleric acid was analysed as a tracer for spoilage in RL feedstock water extract. 19 samples were analysed [30,31,32] (YVG/ZWA).

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

MENTHOL SUPPLIERS

Menthol samples from two new potential suppliers were checked for purity and conformity with specifications [33,34] (YVG/ZWA).

FILTER MAKER RESIDUE

A residue was found in the triacetin spraying compartment of a KDF2 filter maker. Analysis showed the material to be a polyvinyl acetate polymer with solubility properties similar to a PVA emulsion glue [35,36] (PHM).

PROJECT PICASSO

Seven dust samples were analysed for oxalate and potassium sorbate [37,38,39] (EVM/ZWA).

SEAM GLUE SWIFT K 5675 D

The presence of diethylphthalate was suspected by QA. This was confirmed by GC-MS [40,41] (PHM).

TOBACCO DUST/DEG

DEG and TEG were not confirmed by GC-MS/SIM on two tobacco dust samples [42,43] (PHM).

BLOCK LICORICE EX MONOZZI

Incoming inspection at PMH detected some fat at the licorice block surface. The suppliers claimed this to be a hydrogenated palm oil. IR spectra of this material, palm oil samples ex Menozzi and literature spectra were identical [44,45] (PHM).

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

STEEL ON STEEL EMBOSSING

QC Silvertown requested identification of a deposit found during embossing of an aluminium inner foil. Analysis of the foil, varnish and deposit indicated that the deposit contained some grease, some iron and dust [46,47,48,49] (PHM).

TOBACCO BLEND STORAGE

A tobacco blend at PM Munich was observed to have an off odor after 12 days storage. GC sniffing after headspace concentration on Tenax showed greater "acid odor" peaks on the 12 day old sample compared to a freshly prepared batch [50,51] (GLA/YVG). The 12 day old sample had a greatly decreased ethanol concentration.

FILTER RESIDUE SILVERTOWN

Examination of material found in a filter transfer device in Silvertown indicated about 50% glue with the rest cellulose acetate fibres contaminated by iron dust [52] (PHM).

REFERENCES

[1] Letter from SICPA SA to Michaca-M., August 1, 1988.
[2] Memo from Lauper-G. to Renaudin-C., August 30, 1988.
[3] Memo from Lauper-G. to Michaca-M., September 10, 1988.
[4] Memo from Zirat-A. to Kursteiner-C., August 16, 1988.
[5] Memo from Lauper-G. to Cattin-L., April 29, 1988.
[6] Memo from Lauper-G. to Zirat-A., September 4, 1988.
[7] Memo from Lauper-G. to Michaca-M., September 4, 1988.
[8] Memo from Lauper-G. to Delabays-M., September 4, 1988.
[9] Memo from Lauper-G. to Lutzig-B., September 7, 1988.
[10] Memo from Lauper-G. to Lutzig-B., September 11, 1988.
[11] Memo from Möller-N. to Lauper-G., September 18, 1988.
[12] Memo from Lauper-G. to Möller-N., September 25, 1988.
[13] Memo from Gabler-E. to Lauper-G., November 10, 1988.
[14] Memo from Lauper-G. to Gabler-E., November 22, 1988.
[15] Memo from Gabler-E. to Lauper-G., November 1, 1988.
[16] Memo from Lauper-G. to Gabler-E., November 18, 1988.
[17] Memo from Lauper-G. to Gabler-E., November 24, 1988.
[18] Memo from Lauper-G. to Gabler-E., December 9, 1988.
[19] Memo from Lauper-G. to Gabler-E., December 8, 1988.
[20] Memo from Sutji-S. to Möller-N,m November 9, 1988.
[21] Memo from Lauper-G. to Gabler-E., December 9, 1988.

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[22] Memo from Lutzig-B. to Lauper-G., November 25, 1988.
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[24] Memo from Gabler-E. to Lauper-G., December 12, 1988.
[25] Memo from Lauper-G. to Gabler-E., December 21, 1988.
[26] Memo from Salmon-B. to Murray-M., December 19, 1988.
[27] Memo from Lauper-G. to Salmon-B., December 22, 1988.
[28] Memo from Turpin-D. to Murray-M., September 16, 1988.
[29] Memo from Moor-Ph. to Murray-M., September 16, 1988.
[30] Memo from Hofer-M. to Genoud-Y., August 24, 1988.
[31] Memo from Zwahlen-A. to Hofer-M., September 23, 1988.
[32] Memo from Zwahlen-A. to Kälin-P., November 2, 1988.
[33] Memo from Besso-C. to Murray-M., September 22, 1988.
[34] Memo from Zwahlen-A. to Besso-C., October 12, 1988.
[35] Memo from Besso-C. to Murray-M., October 7, 1988.
[36] Memo from Moor-Ph. to Besso-C., October 14, 1988.
[37] Memo from Luthi-N. to Murray-M., October 24, 1988.
[38] Memo from Moser-E. to Murray-M., October 28, 1988.
[39] Memo from Zwahlen-A. to Luthi-N., November 2, 1988.
[40] Memo from Besso-C. to Murray-M., November 4, 1988.
[41] Memo from Moor-Ph. to Besso-C., November 8, 1988.
[42] Memo from Besso-C. to Murray-M., October 27, 1988.
[43] Memo from Moor-Ph. to Besso-C., November 28, 1988.
[44] Memo from Turpin-D. to Murray-M., December 12, 1988.
[45] Memo from Murray-M. to Turpin-D., December 16, 1988.
[46] Memo from Lutzig-B. to McLaren-G., October 11, 1988.
[47] Memo from Salmon-B. to Lutzig-B., October 25, 1988.
[48] Memo from Lutzig-B. to Lauper-G., November 2, 1988.
[49] Memo from Murray-M. to Lutzig-B., December 16, 1988.
[50] Memo from Besso-C. to Murray-M., December 12, 1988.
[51] Memo from Murray-M. to Besso-C., December 16, 1988.
[52] Memo from Murray-M. to Salmon-B., December 8, 1988.

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RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

DIVISION : PROCESS DEVELOPMENT

SUBJECT TITLE : ADMOIST

PERIOD COVERED : OCTOBER - DECEMBER 1988

WRITTEN BY : Lüthi-N. (NIL)

KEYWORDS : admoist, dickinson, reordering, et, onnens, ftr, fcf, expanded, tobacco

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OBJECTIVES
==========

Assistance to FTR Engineering and Onnens Operations for the evaluation of a Dickinson ADMOIST conditioning system for the reordering of expanded tobacco.

STATUS
======

In December 1988, the first two series of trials for the reordering of expanded tobacco with the Dickinson ADMOIST conditioning system were carried out by Onnens Operations.

For these trials, standard cut rag of an ET-FCF (ET 011) was expanded under normal expansion conditions in the tower. The expanded tobacco at exit tower was then split into two different flows for the reordering. One flow followed the standard route through the reordering cylinder to the filling station, whereas the other went through the ADMOIST conditioner to a newly installed manually operated filling station.

This split of the ET at exit tower guarantees an adequate comparison of the two different reordering systems in relation to taste and physical and chemical results. Throughout the series of trials with the ADMOIST system, various conditions were and will be tried in order to obtain the best possible reordered expanded tobacco.

The analytical follow-up of the first two series of trials is under way. The next series of trials is tentatively planned for January 1989.

U. Lüthi

NIL/cav/January 5, 1989
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RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

DIVISION : PROCESS DEVELOPMENT

SUBJECT TITLE : CAIMAN

PERIOD COVERED : OCTOBER - DECEMBER 1988

WRITTEN BY : Lüthi-N. (NIL)

KEYWORDS : caiman, waterstained, fc, tobacco, expansion, et, ks, br, zw

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OBJECTIVES
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This study was initiated in order to determine if waterstained tobaccos expand as well as standard tobaccos.

STATUS
======

As already reported earlier, for this study flue-cured tobaccos from Korea, Brazil and Zimbabwe were deliberately waterstained, under the supervision of PM tobacco leaf experts, prior to redrying in their respective countries (1). The tobaccos were then shipped to the FTR warehouse in Onnens together with some "normally treated" tobacco as a reference.

The first expansion run took place in September 1988 in Onnens with the trial and reference tobaccos from Korea and Brazil. Four laydowns of 1'000 kg each of 100% flue-cured tobacco were processed in the FTR Primary on September 27 and expanded the next day in Onnens, without any problems. Two additional laydowns of 1'000 kg each with the trial and reference tobaccos from Zimbabwe were expanded on November 30 in Onnens. Again no problems were encountered during the processing and expansion, which was carried out this time also according to specifications for an ET-FCF (ET 011).

In general, only small differences were found between the reference and waterstained tobaccos from the three countries with regard to the physical and chemical results. Hand-made cigarettes were produced from each trial and sent, together with the physical and chemical results, to the Leaf Department in Lausanne for taste evaluation (2).

REFERENCES
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(1) Lüthi-N. Quarterly Report, July-September 1988, p. 41

(2) Lüthi-N. Fax to Babey-J., "Project CAIMAN", Dec. 19, 1988

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RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

DIVISION : PROCESS DEVELOPMENT

SUBJECT TITLE : COURBET

PERIOD COVERED : OCTOBER - DECEMBER 1988

WRITTEN BY : Wood-C. (CWO)

KEYWORDS : primary, proposal, upgrade, optimization

OBJECTIVES

PM-EEMA, Area Operations assistance and co-ordination of primary upgrade proposals and recommendations.

Give technical support in developing specific process recommendations for new primary installations or upgrading existing facilities.

STATUS

During week 4, 1988, a joint meeting was conducted in Sarajevo, Yugoslavia, with Fabrica Duvana Sarajevo (FDS), EEMA Management and Process Development R&D, for the purpose of formulating a primary improvement plan for the FDS factory. This protocol was issued in February and approved by PM EEMA and FDS (1).

Follow-up visits were made in weeks 42 and 44, 1988, to Sarajevo to assist in the start-up of the new or renovated primary equipment. The visits were made with PM-EEMA Area Operations, a TTG Richmond engineer and a representative from Process Development Neuchâtel (2).

PM licensed production was restarted for both Bond Street and Marlboro. A check-list of additional primary modifications to further improve process quality and control was issued by PM-EEMA Area Operations in week 50, 1988 (3).

A primary improvement proposal for the SITAB, Bouake, factory in the Ivory Coast was reviewed in week 47 between PM-EEMA Area Operations and Process Development. Recommendations were formulated for an improved equipment layout as well as process control equipment to more consistently meet PM process specifications and improve filler quality for BBS processing and the stem line (4).

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REFERENCES
==========

(1) Betson-D., FDS Protocol, January 27, 1988

(2) Betson-D., Yugoslavia Burley Dryer Rebuild in Sarajevo, June 24, 1988

(3) Betson-D., Primary Renovation, Fabrika Duvana Sarajevo, December 16, 1988

(4) Lampert-S., SITAB, Bouake - préparation générale ligne Basic Blend et ligne côtes, November 30, 1988

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RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

DIVISION : PROCESS DEVELOPMENT

SUBJECT TITLE : DALI

PERIOD COVERED : OCTOBER - DECEMBER 1988

WRITTEN BY : Borgognon-D. (DIB)

KEYWORDS : dali, rcb/ch, rcb/us, nc, rl-tc, rl-150b, rl-g, rl-bg, rcb-g

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OBJECTIVES

This project was initiated as a follow-up to the Blend Component Studies. The aim of the project is to establish the correlation between cigarette firmness and OV, CV and OV, in 100% Recon cigarettes, in order to ascertain the specific correction factors for firmness and CV as a function of OV.

STATUS

The study was completed and the final report issued (1).

SUMMARY OF THE STUDY

Seven different types of reconstituted tobaccos were evaluated. A total of two batches of each of the Recons was run through the Miniprimary.

Each lot was tested for cut filler sieve size, CV and OV, after drying and exit maker. Cigarettes were equilibrated, weight selected, and re-conditioned in an equilibration cabinet at different relative humidities. Together with these cigarettes, cut filler samples were also equilibrated. Immediately after the second equilibration, cigarette firmness and cut filler CV were tested.

The OV correction factors for firmness and filling power were established and reported as a result of different equilibration conditions of RH.

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Type	Firmness Correction factor mm / %OV	CV Correction factor ml/g . %OV
RL-150B NC	0.30	0.35
RL-B/G	0.28	0.30
RL-TC NC	0.29	0.36
RL/G	0.31	0.35
RCB/US NC	0.29	0.32
RCB/G	0.30	0.29
RCB/CH	0.30	0.22

In general there are large variations in the equilibrium OV results from one sampling point to another and from one batch to another. However, there is a trend to lower equilibrium OV's after maker and to better reproducibility at cigarette level.

REFERENCE

(1) Borgognon-D. Reconstituted Tobaccos : correction factors for firmness and CV (Project DALI), Final Report, December 1988

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qr488dalidib

Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

DIVISION : PROCESS DEVELOPMENT

SUBJECT TITLE : DEGAS

PERIOD COVERED : OCTOBER - DECEMBER 1988

WRITTEN BY : Borgognon-D. (DIB)

KEYWORDS : degas, us, burley, fc, br

OBJECTIVES
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The aim of this project is to evaluate the influence of strip package OV on Burley strip size.

STATUS
======

All seven different lots of US Burley were processed in the Mini-primary, with one repeat treatment, i.e. a total of fourteen batches processed. All the 42 TLA-type cigarette prototypes were produced.

The analytical work on parameters such as firmness, OV, sieve size testing, etc. on all prototypes was completed and the corresponding results were compiled.

The evaluation of the results is in progress and we expect to complete the final report before the end of February 1989.

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RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

DIVISION : PROCESS DEVELOPMENT

SUBJECT TITLE : ET-PAN-EUROPE

PERIOD COVERED : OCTOBER - DECEMBER 1988

WRITTEN BY : Lüthi-N. (NIL)

KEYWORDS : et, pan, europe, fc, qa, result

OBJECTIVES
==========

The main aim of this project is to check the interchangeability of the ET's from the four different ET production centers in Europe.

STATUS
======

At the request of the EEC Leaf Department, a presentation and discussion was held at an R&D monitoring meeting on November 4, 1988 (1), of some chemical results (TA and RS) of the expanded product of the three main ET's in Europe (ET-FCF, ET-FC/LGT and ET-FC/OR) from the four European production centers for 1987 and part 1988.

According to the various discussions and remarks made during this presentation, the following actions were and/or will have to be taken :

- The QA results generated by the affiliates should be centralized each month for comparative purposes.
- The chemical and physical results of the tobacco before expansion must be included.
- A more adequate scale has to be applied on graphs for future presentation, especially of chemical results.
- The compiled results have to be reviewed at least every three months with the Leaf Department.

In order to be able to compile the ET results, the local QA's were requested to send their results each month to the undersigned (2, 3).

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The compiling of the results for 1987 and 1988, including values of the tobacco before expansion, will be completed in table form by the end of January 1989. However, for the ET's ex BOZ the chemical results before expansion are only presented up to the end of June 1988, when it was decided by the local QA in BOZ to stop carrying out these analyses. This point is currently being discussed with local management.

REFERENCES

(1) Lecoultre-E., Profs note to distribution, "R&D monitoring meeting", October 26, 1988

(2) Lüthi-N., Memo to Loos-P., "QA figures on expanded tobacco", November 18, 1988

(3) Lüthi-N., Memo to Tessendorf-W., "QA figures on expanded tobacco", November 18, 1988

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RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

DIVISION : PROCESS DEVELOPMENT

SUBJECT TITLE : FOX

PERIOD COVERED : OCTOBER - DECEMBER 1988

WRITTEN BY : Borgognon-D. (DIB)

KEYWORDS : fox, recon, ltr, rl

OBJECTIVES
==========

The aim of this project is the reintroduction of LTR reconstituted tobacco sheet materials in PME blends.

STATUS
======

During week 39, four trials were carried out at LTR Industries, Le Mans, France :

Trial	Lot	LTR-Code	Remarks
A (Ref)	5044	AM 19/88	With woodpulp and $CaCO_3$. Same amount/ level as production 1982. ABR-Burley stems not washed. With BOS-Orient. scraps-crop 1986 exempt.
B	5052	AM 20/88	Without woodpulp - no $CaCO_3$. ABR-Burley stems washed. No BOS-Orient. scraps
C	5055	AM 21/88	Without woodpulp - no $CaCO_3$. ABR-Burley stems not washed. No BOS-Orient. scraps
D	5158	AM 22/88	Without woodpulp - no $CaCO_3$. No ABR-Burley stems. No BOS-Orient. scraps

Process Development was involved in two areas of this project :

- sampling of the Recon lots and co-ordination of the analytical work on the samples,
- processing of 13 Miniprimary laydowns : four ML 017, four ML 039 and five MA 020 (SAUSOLITO).

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Cigarette making as well as the analytical follow-up was carried out by Product Development.

The analytical results of the four LTR trial products are presented in the appendix in comparison to the other Recons as used in our blends before the reintroduction of LTR.

For LTR products, the results show :

- a lower nitrate content, with the exception of Lot No. 5055 which was produced with ABR Burley stems, not washed,
- a higher RS content,
- a very low humectant content.

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A P P E N D I X

LTR Lot :		5044	5052	5055	5158
Nitrate-nitrogen	%	0.19	0.22	0.60	0.11
Reducing sugars	%	6.8	6.4	5.9	7.5
Ammonia-nitrogen	%	0.12	0.14	0.20	0.10
Total alkaloids	%	0.78	0.72	0.83	0.64
Propylene glycol	%	0.2	0.3	0.2	0.2
Glycerin	%	0.3	0.3	0.3	0.2
TEG	%	n.d.	n.d.	n.d.	n.d.
Total humectants	%	0.5	0.6	0.5	0.4
Calcium carbonate	%	4.8	traces	traces	traces

Recon used in our blends :		RL-B/G Lot 5080 (1)	RCB/US Lot 1702 (1)	RL-TC Lot 5059 (2) (3)	RL/G Lot 5035 (2)	RL-150B Lot 5075 (2)
Nitrate-nitrogen	%	0.43	0.21	0.42	0.42	0.39
Reducing sugars	%	4.2	0.7	5.0	4.7	5.4
Ammonia-nitrogen	%	0.46	1.47	0.10	0.10	0.60
Total alkaloids	%	0.83	0.76	0.91	0.84	0.80
Propylene glycol	%	1.8	1.8	2.4	2.2	2.7
Glycerin	%	1.5	1.9	1.8	1.7	1.8
TEG	%	n.d.	n.d.	n.d.	n.d.	n.d.
Total humectants	%	3.3	3.7	4.2	3.9	4.5
Calcium carbonate	%	0.1	0.1	n.a.	n.a.	n.a.

(1) analysed in October 1988
(2) TLA data
(3) used in MA 020 (SAUSCLITC)

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RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

DIVISION : PROCESS DEVELOPMENT

SUBJECT TITLE : MINIPRIMARY

PERIOD COVERED : OCTOBER - DECEMBER 1988

WRITTEN BY : Borgognon-D. (DIB)

KEYWORDS : miniprimary, equipment, millet, heinen

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1. EQUIPMENT (Project MILLET)

OBJECTIVES

The aim of this project is to increase the capacity of the Miniprimary and improve flexibility as well as the quality of the cut filler while maintaining the desired subjective characteristics.

STATUS

During the reporting period two special MLK laydowns were processed in the Miniprimary with the aim of improving operational flexibility (Trial 1) and capacity (Trial 2) :

Trial 1

- The sequence of the treatment of the different components was modified in order to allow the processing of batches including Burley casing and drying on Mondays. This could not be done until now since the Burley casing should not be stored over the weekend and under normal practice it was prepared the day before. It was therefore decided to reverse the program of work for a trial starting with Orient and FC treatment instead of the Burley treatment. This allows the preparation of Burley casing on Monday mornings.

Trial 2

- In order to run three batches including Burley treatment in two working days, the processing of one batch must be interrupted at a convenient step. A trial was carried out to determine whether treated Burley stored overnight is subjectively acceptable.

Some relevant parameters of the two MLK cigarettes produced from these batches are shown in the appendix. Prototype 007p was produced with FTR MLK cut filler (control).

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COMMENTS

Appendix

The cigarette results do not show relevant trends, except for the TA content of the FTR control which is about 0.20 % lower than that of the trials. This is probably due to a modification of the MLK blend, as the tobacco used for the control was produced at a later date.

Taste evaluation

On December 14, 1988, the cigarettes were evaluated by Panel A in Lausanne (1). The panelists found that cigarette 005p produced from Trial 1 and cigarette 007p (FTR control) were of good Marlboro quality, with flavor and taste well pronounced, acceptable, whereas cigarette 006p produced from Trial 2 (interruption after Burley treatment) had a darker taste, was missing flavor sensation, was somewhat on the bitterish side, and not acceptable.

PLANS

The second trial will be repeated using a modified sequence of processing.

2. OPERATIONS

- The following batches were processed through the Miniprimary during the reporting period (50 working days) and during 1988 (222 working days) :

	50 working days (Oct.-Dec. 1988)	222 working days (Jan.-Dec. 1988)
For Product Development :	33	148 = 63.5 %
For Process Development :	11	24 = 10.3 %
For Quality Assurance :	0	14 = 6.0 %
For Research :	9	40 = 17.2 %
FTR :	7	7 = 3.0 %
	60	233 = 100 %

Compared to 1987, the total number of batches has increased by 22. The number of batches including Burley treatment amounted to 48.2% this year compared to 28.0% during 1987.

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- During the months of November and December 1988, several batches of Bastos and Mercedes filler, too small to be economically processed in the FTR Primary, were processed in the Miniprimary to be used in FTR production cigarettes for the Swiss market.

3. REFERENCE

(1) De Borst-E. Taste Evaluation, December 14, 1988

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A P P E N D I X

Miniprimary Batch No.		1498 (Trial 1)	1499 (Trial 2)	FTR Control
Cigarette prototype		005 p	006 p	007 p
Cigarette				
Total weight	mg/cig	968	976	975
Tob.weight at 12.5% OV	mg/cig	750	762	756
Corr.firmness at 12.5% OV	mm	2.86	3.00	3.02
Cigarette RTD	mm H_2O	101	99	101
Dilution	%	13	13	13
Filler				
Total alkaloids	%	2.02	2.06	1.82
Reducing sugars	%	8.1	8.8	8.8
Nitrate-nitrogen	%	0.21	0.21	0.22
Smoke				
Tar	mg/cig	16.8	16.8	16.8
SN	mg/cig	1.20	1.18	1.12
CO	mg/cig	16.5	16.8	17.3
NO	mg/cig	0.24	0.25	0.26
Puff count	n/cig	8.8	9.1	9.3

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RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

DIVISION : PROCESS DEVELOPMENT

SUBJECT TITLE : PICASSO

PERIOD COVERED : OCTOBER - DECEMBER 1988

WRITTEN BY : Lüthi-N. (NIL)

KEYWORDS : picasso, tmci, recon, tobacco, sheet, rcb, monique, es, ch, trial, tarragona, asta, hosokawa, micropul, db, grinding

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OBJECTIVES
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The aim of this project is to create an in-house capability for TMCI, a reconstituted tobacco process using a different slurry system to that of RCB, as requested by TTG Richmond. The RCB/ Monique sheet line in Onnens appeared suitable for attaining this objective. The project was implemented and now allows for process and product development trials and production of sheet materials using TMCI technology with various binder systems for limited periods of time.

It also involves our assistance, together with PM Richmond, to Tabacalera SA in Spain for sheet development and the start-up of TMCI installations in Tarragona and Cadiz using the PM binder system.

STATUS
======

As reported earlier, about 5'000 kg of Swiss tobacco feedstock was shipped in August 1988 to Hosokawa Micropul in Germany to be finely ground to two different sizes (1).

The ground material was back in Onnens at the beginning of October. Sieve analyses of the ground products showed quite similar values for both sizes (2, 3). Instead of having a product with 70% smaller than 400 mesh (mean particle size, MPS, about 40 u) and one with only 30% smaller than 400 mesh (MPS about 60 u), we had two products with an MPS of about 35 u and 40 u. This was related to big problems encountered during the grinding, possibly due to a relatively high OV content above 10% of the tobacco material. There was no equipment available to dry the material down to 4 - 5% OV prior to grinding.

Both sizes were used during a three week trial program in November 1988 on the RCB/Monique-TMCI installation in Onnens (4). In general, three different types of trial were carried out during this period, each time using finely ground products :

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- RCB/Monique : using the normal RCB processing steps such as batch slurry mixing, aging, refining, drying, etc.

- TMCI/RCB : slurry preparation with the high shear mixer but slurry application by means of the RCB reverse roll coater

- TMCI/ASTA : slurry preparation with the high shear mixer and slurry application by means of the casting box.

In addition, several conditions were tried for each type of trial by varying parameters such as dryer oil temperature, total solids, sheet weight, etc.

On the whole the trials were quite successful and, in spite of some weak points still existing on the installation, we were able to produce sheets of a much superior quality to those produced in 1987 using the same conditions. This means that the positive results obtained in Tarragona, Spain, when using finely ground material, were confirmed.

Samples of the sheets produced, together with data of the processing conditions, were sent to R&D Richmond for information. The analytical follow-up is under way and a special report will be issued by the undersigned.

TMCI Spain

In December 1988, trials were run in Tarragona, Spain, to confirm that the mechanical modifications made by TMCI had successfully eliminated the problems encountered during the trials in May 1988.

Satisfactory sheets were produced and a two week trial program is now planned for January 1989 to optimize the tobacco particle size (5).

REFERENCES

(1) Lüthi-N., Quarterly Report, July-September 1988, p. 52

(2) Lüthi-N., Fax to Gellatly-G., "Project PICASSO, tobacco dust samples", October 25, 1988

(3) Gellatly-G., Fax to Lüthi-N., "Sieve analysis", November 1, 1988

(4) Lüthi-N., Memo to distribution, "Essais TMCI à Onnens", November 4, 1988

(5) Gellatly-G., Note to Alonso-H., "Process evaluation weekly summary on ASTA reconstituted tobacco", December 20, 1988

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RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

DIVISION : PROCESS DEVELOPMENT

SUBJECT TITLE : PISSARRO

PERIOD COVERED : OCTOBER - DECEMBER 1988

WRITTEN BY : Lüthi-N. (NIL)

KEYWORDS : pissarro, expansion, run, et, berlin, it, mti, fc, tobacco, br

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OBJECTIVES

This project was implemented to carry out expansion runs in the ET installation at PMG-Berlin for MTI (Italian Monopoly), using 100% flue-cured tobacco delivered by MTI. It also involves our assistance to MTI for the installation and start-up of an ET plant in Bologna.

STATUS

As already reported earlier, the first laydown with the new tobacco blend ex MTI (run No. 9) was eventually expanded on August 23, 1988, with some delay due to several problems caused by the new tobacco (1).

Additional runs were then carried out during September (runs Nos. 10-12), October (runs Nos. 13-15), November (runs Nos. 16 and 17) and December (runs Nos. 18 and 19). This finally resulted in a total of 11 laydowns of 10'000 kg each of the new tobacco blend up to the end of December 1988.

A first status report covering the period up to the end of October and containing physical and chemical results of the runs was issued by the undersigned on December 19, 1988 (2).

Assistance to MTI

The ET/DIET plant under construction in Bologna for MTI was visited on December 15 and 16, 1988, by a representative from Area Operations, from Process Development, and an ET/DIET expert/ consultant. A separate trip report was issued by the latter (3).

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

REFERENCES
==========

(1) Lüthi-N. Quarterly Report, July-September 1988, p. 54

(2) Lüthi-N. Report to Trento-A., "Project PISSARRO, expansion runs IX-XV for MTI in PMG-Berlin", December 19, 1988

(3) Knight-J.B. Visit Report to Hansen-M., "Bologna DIET Plant Installation - December 15-16, 1988"

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

DIVISION : PROCESS DEVELOPMENT

SUBJECT TITLE : RODEO

PERIOD COVERED : OCTOBER - DECEMBER 1988

WRITTEN BY : Lüthi-N. (NIL)

KEYWORDS : rodeo, total, blend, expansion, tobacco, fc, gb, ftr, et

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OBJECTIVE
==========

Produce a cigarette for the UK market using the total blend expansion technology.

STATUS
======

In the context of this project, a total blend expansion run was carried out in November 1988 in the FTR ETNA installation in Onnens. The tobacco for this trial, consisting of 1'000 kg of Virginia, was processed (conditioned, cased and cut) on November 29 in the FTR Primary and expanded the next day in Onnens.

Based on our experience of earlier total blend expansion trials (projects NILE, EUPHRATE), the process gas temperature was kept constant at 220°C during the whole trial period. No special problems were encountered during the running of the trial.

For the first time, all the expanded tobacco by-passed the reordering cylinder, following a new route from exit tower to a provisionally installed manually operated filling station, thus resulting in less degradation of the expanded tobacco.

A trial report was issued jointly by the ET Process Engineer and the undersigned (1).

The necessary follow-up with the expanded tobacco will be carried out by the Product Development group.

REFERENCE
==========

(1) Dufour-P., Lüthi-N. Report to Babey-J., "Essai d'expansion, RODEO", December 19, 1988

U. Lüthi

NIL/cav/January 5, 1988
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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

DIVISION : PROCESS DEVELOPMENT

SUBJECT TITLE : TOBACCO PROCESS QUALITY (GIOTTO)

PERICD COVERED : OCTOBER - DECEMBER 1988

WRITTEN BY : Frattolillo-A. (ANF), Wood-C. (CWO)

KEYWORDS : tobacco, process, quality, giotto, pme

OBJECTIVES
==========

- To provide tobacco quality comparisons between PME affiliates from the process point of pre-conditioning to the cigarette finished product.

  The program compares Pan-European and German Marlboro tobacco processes and will show the impact of individual unit processes upon tobacco quality in terms of sieve analysis, filling power, moisture control, and other quality parameters.

  These results will be used to evaluate process quality via standard procedures and common sampling points in a standardized reporting format to facilitate comparative analysis.

- To improve overall tobacco processing by optimizing tobacco process quality and reducing degradation and losses, thereby optimizing cigarette quality and maximizing yield.

STATUS
======

- A status report, presentation and review of the extension program for regional primary optimization was given to Headquarters Operations on October 25, 1988.

- The third quarter 1988 report with comparative factory profiles was issued. These results were reviewed in Munich in week 46 with primary representatives from Berlin, BOZ and FTR also attending (6). A format for a 1987 versus 1988 comparison was also presented and a final version accepted. This will be a separate report to be issued in January 1989 and tentatively reviewed in a February meeting, not yet determined as to date and location.

  Strip size reporting within the context of GIOTTO was also reviewed and a reporting format agreed upon in the week 46 meeting. These results will be included in draft form in the first quarter 1989 report for further comments and recommendations.

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RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

PLANS
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- In conjunction with the R&D Computer Support Group, formulate a timetable for direct computer transmission of data to R&D from each affiliate in January 1989.

- Develop, in conjunction with affiliate locations, a method to analyse statistically the GIOTTO data and identify significant trends or differences within each factory and between locations.

- On a routine basis, evaluate process and cigarette quality results in relation to modifications, to tobacco processing, equipment changes, blend changes, capacity and flow rates, measurement methodology and process specifications.

- Based on consistent tobacco process quality improvements in combination with quality audit results, make recommendations in regard to process improvements, process specifications, and finished product weight and firmness objectives.

REFERENCES
==========

Tobacco Process Quality Program :

(1) - 1987 Monthly factory results : Munich, Berlin, BOZ, February 10, 1988

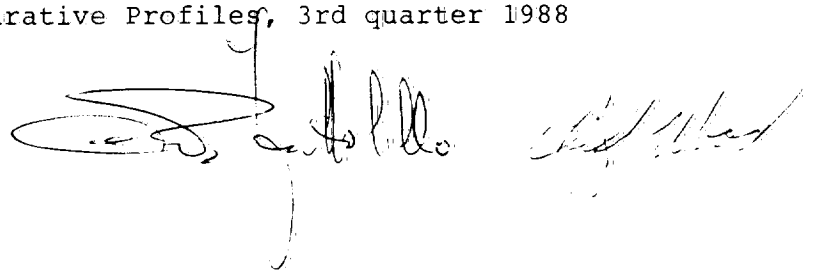
(2) - 1987 Factory profiles : Mun., Ber., BOZ, March 8/9, 1988
- 1987 Factory comparisons : Mun., Ber., BOZ, March 8/9, 1988

(3) - GIOTTO Trip Report, March 7-10, 1988

(4) - Tobacco Process Quality Program Meeting, Berlin, May 10, 1988, Frattolillo-A. & Wood-C. to distribution

(5) - Regional Primary Optimization Program, May 27, 1988, Darrah-S. to distribution

(6) - Tobacco Process Quality Program, GIOTTO, Factory and Comparative Profiles, 3rd quarter 1988



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RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

DIVISION : PROCESS DEVELOPMENT

SUBJECT TITLE : TURNER

PERIOD COVERED : OCTOBER - DECEMBER 1988

WRITTEN BY : Frattolillo-A. (ANF), Wood-C. (CWO)

KEYWORDS : turner, burley, p&s, capacity, drying

OBJECTIVES
==========

Assist PMH in achieving an increase in Burley production capacity to meet the forecasted requirements and provide adequate maintenance and cleaning time within the three shift primary operations.

Give technical support within the scope of achieving the increased throughput while maintaining current quality and subjective standards at a minimum of 1'700 kg per dryer per hour, up from 1'450 kg/h standard for each dryer.

STATUS
======

Confirmation and new US profiles were conducted during week 35 in BOZ with the following formats :

Test	Flow/Dryer	Tunnels	Concentrated Spray	Temp. Profile
1.	1'700 kg/h	yes	123 lt/1000	85-95-85 °C
2.	1'700 kg/h	yes	130 lt/1000	90-95-90 °C
3.	1'700 kg/h	yes	normal	100-100-85 °C
Control	1'450 kg/h	no	normal	100-100-85 °C

Panel A evaluated these trials on September 29 and expressed a clear preference for test No. 1 or the standard US drying profile of 85 - 95 - 85 °C.

A full industrial trial to confirm these results was recommended by Panel A prior to final approval. These trials were conducted in week 40 for confirmation and resulted in acceptance by Panel A for the US drying profile at 1'700 kg/hr per dryer.

BOZ will now proceed to confirm these results on the remaining blends and subjectively screen the results through the local Panel B for acceptance. All Burley production is expected to be at the 1'700 kg/hr rate by early 1989, following confirmation results on BBS, L&M, Merit and Philip Morris production.

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

REFERENCES

(1)	Newman-T.A.	to distribution, "P&S Dryers Cooling Zone OV's", November 11, 1986
(2)	Van Hoydonck-E.	to Peterse-J.H., "Capacity Increase Burley", March 10, 1987
(3)	Committee Report	to distribution, "P&S Operating Standards", July 14, 1987
(4)	De Borst-E.	to Friedrich-H., "Burley Capacity Increase", December 14, 1987
(5)	Peterse-J.H.	to Wood-C., "Data Apron Capacity Increase Test Bergen-op-Zoom", January 18, 1988
(6)	Wood-C.	to Peterse-J.H., "Apron Dryer Capacity Increase BOZ", January 19, 1988
(7)	Van Kalmthout-G., Appleboom-H.	to Loos-P., "MC after P&S dryers", March 16, 1988
(8)	Van Kalmthout-G.	to Gally-A., "Chemical Analysis Apron Capacity Test", March 10, 1988
(9)	Frattolillo-A., Wood-C.	to Van Kalmthout-G., "Burley Line Capacity Increase and Chemical Evaluation", April 26, 1988
(10)	Frattolillo-A., Wood-C.	to Van Kalmthout-G., "Burley Capacity Trials", July 21, 1988
(11)	Van Kalmthout-G.	to distribution, "Capacity Increase P&S Dryers" meeting, August 26, 1988
(12)	Van der Scheun-H.J.	to distribution, "Capacity Increase Tests of Burley Line at BOZ on 01/09/88 and 02/09/88"
(13)	De Borst-E.	to Darrah-S., "Burley Capacity Increase BOZ", September 29, 1988
(14)	De Borst-E.	to Darrah-S., "Marlboro Burley Capacity Increase BOZ (acceptance confirmation), November 27, 1988
(15)	Willems-M.	to meeting participants, "Capacity Increase of the Burley Lines (proposal for other blends), November 11, 1988

ANF/CWO/cav/January 10, 1989
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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

DIVISION : PROCESS DEVELOPMENT

SUBJECT TITLE : VELASQUEZ

PERIOD COVERED : OCTOBER - DECEMBER 1988

WRITTEN BY : Pulfer-P. (PEP)

KEYWORDS : expansion, hauni, philippines, tunnel

OBJECTIVES

- Assist PM-Asia in evaluating HAUNI-HT treatment of cut rag and cut stem for improved filling power, sieve quality and subjective evaluations using feedstock from La Suerte, Philippines, in co-ordination with PM-Hong Kong and TTG-Richmond.

- Conduct trials in the HAUNI Pilot Plant followed by processing of blends and flavoring in the Miniprimary, cigarette making, coded packing and analytical follow-up in Neuchâtel.

- Co-ordinate CI analysis samples for PM-Richmond and subjective samples for PM-Asia, PM-Richmond, La Suerte, Philippines, and Panel A, Lausanne.

STATUS

This project is completed and the final report was edited in December 1988 [Ref. 1].

SUMMARY

During week 38, 1'200 kg strips ex total blend silo and 500 kg unprocessed stem blend were sent by air freight from La Suerte, Philippines, to HAUNI Hamburg.

These materials were then processed in the HAUNI Pilot Plant at the beginning of week 39. Two (2) different batches with HT treatment and one reference batch without HT treatment were produced for both cut rag and stem.

- HT treated cut rag :

  1 batch : counter-current air flow in the rotary dryer
  1 batch : co-current air flow in the rotary dryer

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- HT treated stem :

  1 batch : 7 bar steam pressure in the HT tunnel, rotary drying
  1 batch : 10 bar steam pressure in the HT tunnel, vibro drying

The tobacco and stem materials were then shipped from Hamburg to Neuchâtel. Six (6) blends were processed in the Miniprimary starting week 40, using the reference cut rag and the HT treated cut rag (counter-current air flow), each in combination with the three (3) different "types" of stem. Cut rag and stem were blended in the proportion of 91.2% and 8.8%, followed by application of aftercut received from PM Richmond.

Samples were taken of cut rag and stem before blending and of cut filler after the AC cylinder and analysed for filling power, sieve size distribution and OV.

Cigarettes with "regular" cigarette paper at densities of 250, 255 and 260 mg/cc and "high citrate" cigarette paper at 260 mg/cc density were produced for each of the six blends on a Mk 9-5 at the end of week 40. "High citrate" paper prototypes were made for subjectives only. The cigarettes were then analysed as follows :

- CI analysis (PME Smoking Laboratory)
- Firmness/tobacco weight analysis (Process Development Laboratory)

The subjective evaluation was carried out in week 50 and the results will be reported separately.

RESULTS
=======

After the evaluation of the available data, the following observations were made :

1. Cut Rag (graphs 1 and 5)

   - Increase of filling power of 2% with the HT tunnel treated versus reference cut rag (5.51 cc/g vs 5.40 cc/g), however no differences in sieve size.

   - No differences when using co-current versus counter-current air flow in the rotary dryer in combination with the HAUNI tunnel for either filling power or sieve size.

2. Stem (graphs 2 and 5)

   - Increase of filling power of 8% (4.95 cc/g) with HT treated stems (7 bar) and 20% (5.51 cc/g) with HT treated stems (10 bar) versus the reference stems (4.58 cc/g).

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- 6 + 12 mesh fractions improved from reference (13.3%) to HT treated stems (26.3%), as well as when using higher steam pressure in the HT tunnel (42%).

3. Cigarettes (graphs 3, 4, 6 and 7)

In order to produce a cigarette with a 3.00 mm firmness, compared to the reference :

a) 2.8% less tobacco was needed when using the HT tunnel on cut rag, or 22 mg less tobacco per cigarette.

b) 1.9% less tobacco (15 mg) was needed when using the HT tunnel on stems with 7 bar steam pressure, and 1.5% less (12 mg) when using 10 bar steam pressure and vibro dryer, which was not significantly different from the 7 bar and rotary dryer results.

c) When combining HAUNI HT cut rag and HT stem, the cut filler with HT stem at 7 bar and rotary dryer indicated a 4.2% improvement, i.e. 33 mg less tobacco was required for 3.00 mm firmness as compared to the reference.

HT cut rag in combination with the HT stem, expanded at 10 bar steam pressure and dried with the vibro bed, indicated a 5.2% improvement, i.e. 41 mg less tobacco was required for 3.00 mm firmness as compared to the reference.

d) These results are similar to those found in a US Marlboro study in R&D Richmond using a HAUNI tunnel for cut rag treatment only. However, the 22 mg weight reduction potential for the Philippine HT cut rag is somewhat lower than the US test results of 40 mg weight reduction potential. The US evaluation did not include HAUNI stem [Ref. 2].

REFERENCES

[1] Pulfer-P. "HT Trials on cut rag and stem", Project VELASQUEZ Final Report, December 1988

[2] Haller-D.C. to Wagoner-S.R., "Status - steam conditioning of cut filler", August 21, 1987

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

GRAPHS

1. - Sieve size "cut rag" (6,12,35 mesh + pan)
2. - Sieve size "stems" (6,12,35 mesh + pan)
3. - 6 mesh cut filler
4. - 35 mesh + pan cut filler
5. - Corrected CV at 12.5% OV cut rag and stems
6. - Corrected CV at 12.5% OV cut filler
7. - Calculated cigarette tobacco weight at 3.00 mm firmness

Component	Codes	Description
- cut rag	101	reference cut rag
	202	HT cut rag (air flow in the dryer counter-current)
	212	HT cut rag (air flow in the dryer co-current)
- stems	303	reference stems
	404	HT stems (7 bar in HT tunnel, rotary dryer)
	505	HT stems (10 bar in HT tunnel, vibro bed dryer)
- cut filler	1469	components 101/303 (reference)
	Phil.Control	reference cigarette ex La Suerte, Philippines
	1470	components 101/404
	1486	components 101/505
	1471	components 202/303
	1472	components 202/404
	1473	components 202/505

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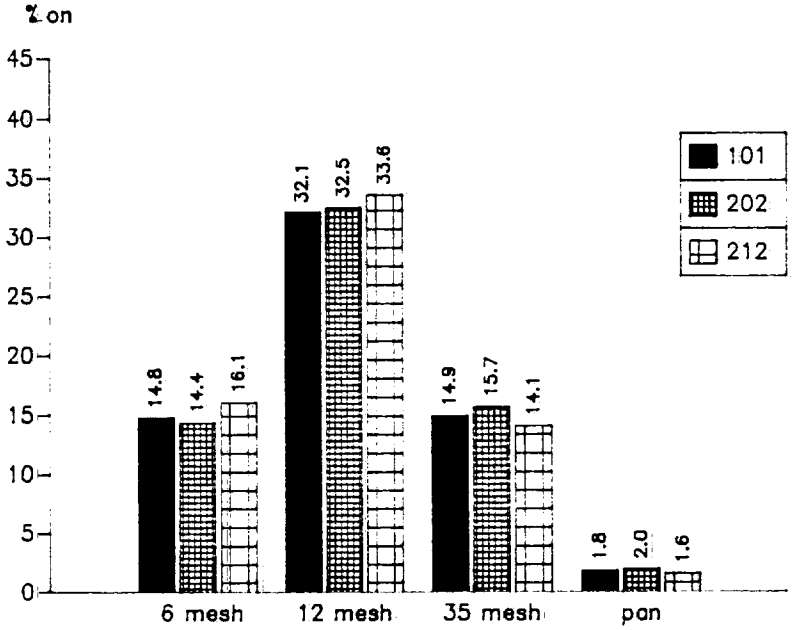
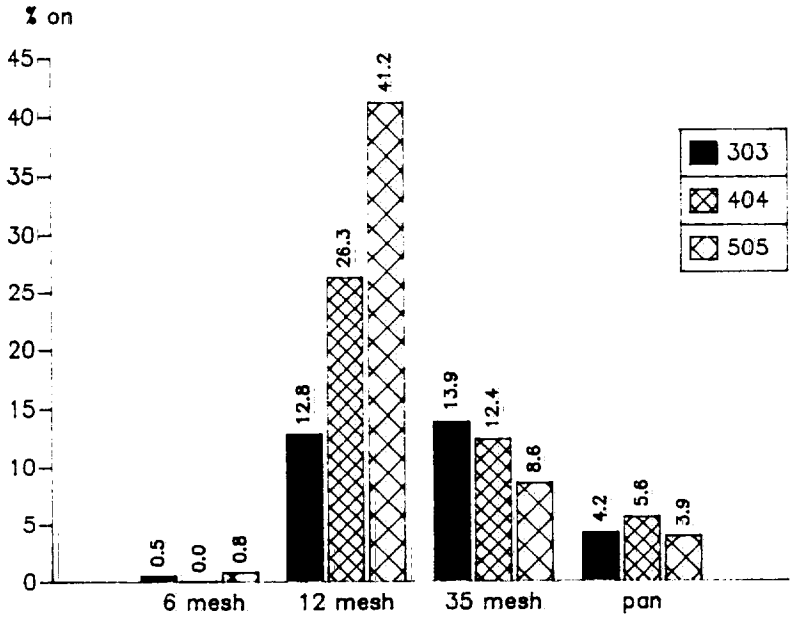
GRAPH 1

PROJECT VELASQUEZ
* SIEVE SIZE "CUT RAG"



GRAPH 2

PROJECT VELASQUEZ
** SIEVE SIZE "STEM"



* averages of three batches

** one composite sample per type of stem

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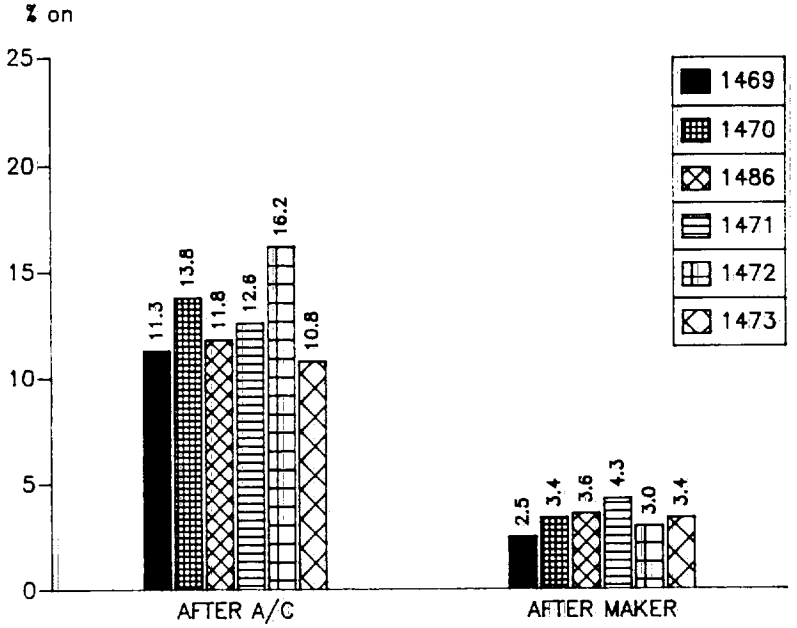
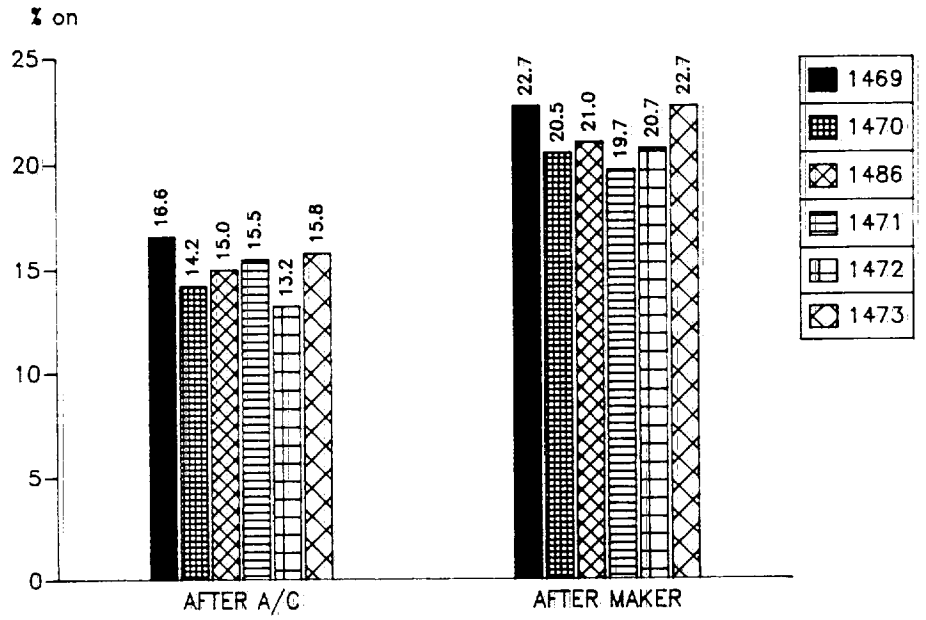
GRAPH 3

PROJECT VELASQUEZ
6 MESH "CUT FILLER"



GRAPH 4

PROJECT VELASQUEZ
35 MESH + PAN "CUT FILLER"



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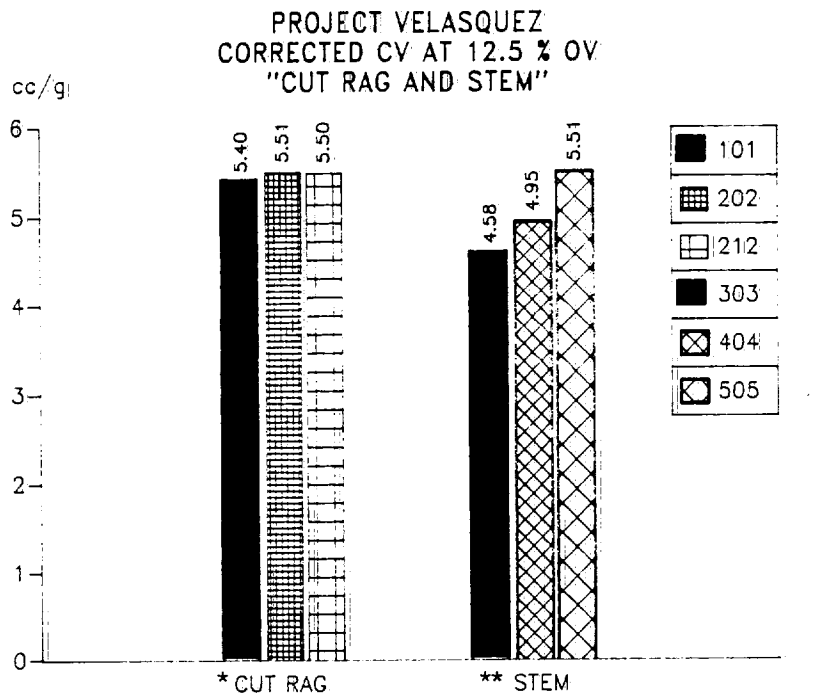
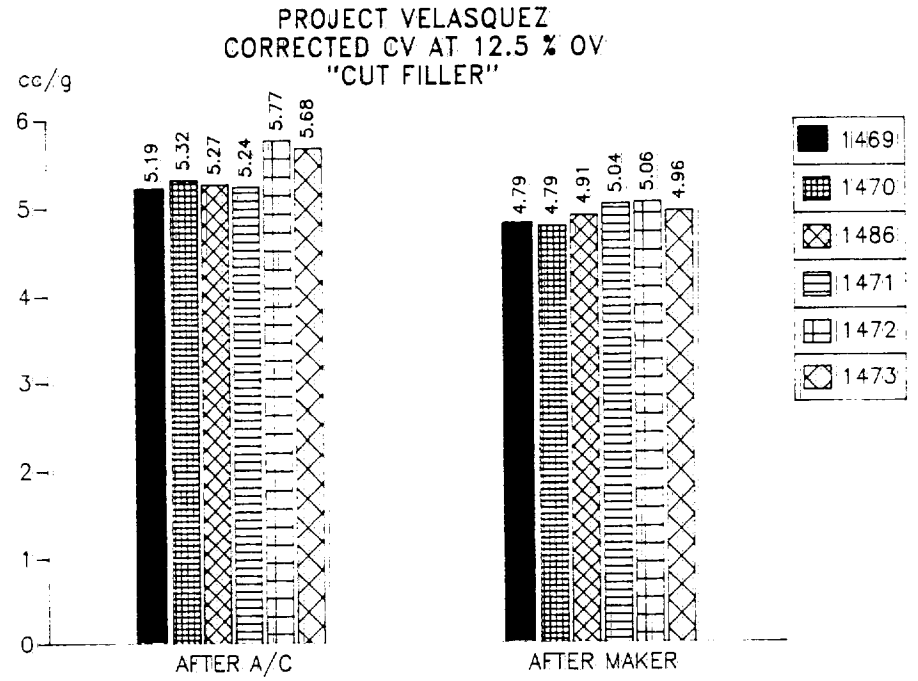
GRAPH 5



GRAPH 6



* averages of three batches

** one composite sample per type of stem

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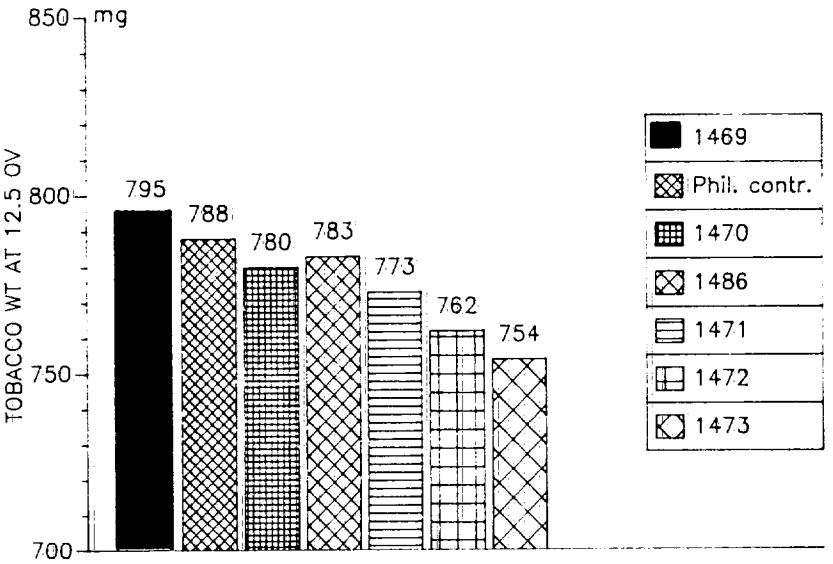
Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

GRAPH 7

PROJECT VELASQUEZ
CALCULATED CIGT. TOBACCO WEIGHT AT 3.00 FIRMNESS



BATCH DESCRIPTION

1469	:	reference cut rag, reference stems
Philippine control	:	reference cigarette ex La Suerte, Philippines
1470	:	reference cut rag, HT stems (7 bar, rotary dryer)
1486	:	reference cut rag, HT stems (10 bar, vibro dryer)
1471	:	HT cut rag, reference stems
1472	:	HT cut rag, HT stems (7 bar, rotary dryer)
1473	:	HT cut rag, HT stems (10 bar, vibro dryer)

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RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

DIVISION	:	PROCESS DEVELOPMENT
SUBJECT TITLE	:	WEASEL
PERIOD COVERED	:	OCTOBER - DECEMBER 1988
WRITTEN BY	:	Lüthi-N. (NIL)
KEYWORDS	:	weasel, tobacco, blend, mlf, expansion, et, ch, bur, fc, ml

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OBJECTIVES
==========

This project is carried out in the context of the Marlboro taste improvement program.

STATUS
======

Based on the taste evaluation results of the expanded tobacco of two expansion trials carried out in September 1988, an additional run of 3'000 kg was carried out in December in the FTR ETNA installation in Onnens (1, 2).

The tobacco for this trial, consisting again of 10% Burley, 78% Virginia and 12% Maryland, but of different grades, was processed (conditioned, cased and cut) on December 13, 1988, in the FTR Primary and expanded the next day in Onnens. No special problems were encountered during the running of the trials.

The analytical follow-up is under way.

REFERENCES
==========

(1) Lüthi-N. Quarterly Report, July-September 1988, p. 71

(2) Friedrich-H. Profs note to De Borst-E., "Marlboro upgrading program", November 25, 1988

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RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

DIVISION : NEW PRODUCT DEVELOPMENT

SUBJECT TITLE : PRODUCT INNOVATION

PERIOD COVERED : OCTOBER - DECEMBER 1988

WRITTEN BY : ABDELGAWAD-A (AHA)

KEYWORDS : project,volga,amour,cigarette,filter, delivery,puff-by-puff,profile,hollow-filter, ultra-low-tar,tube-in-tow,menthol,tobacco, wrapper,material

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PROJECT AMOUR - NO 0131

Objective

To develop hole-in-tow filters in order to produce 1 mg, 4 mg and 6 mg tar cigarettes (84 mm length) with improved initial puffs.

Status

Referring to our last report (ref. 1), a 1.5/46000 Y tow was ordered and filters with high RTD around the hole were produced in Intertaba. Prototypes were produced using these filters and their puff-by-puff profiles were evaluated. Increasing the filter RTD around the hole did not improve the results. This may be due to the fact that the tow surrounding the hole was too porous and the smoke stream passed through the longitudinal surface which is near to the hole edge. Thus there is no precise area at the point where the hole-in-tow filter joins the mouth-end filter where blockage could occur (ref. 2).

References

[1] Abdelgawad-A, Quarterly Report, July - September 1988
[2] Abdelgawad-A. Quarterly Report, Project PPPP, January - March 1988, p 100, fig. 3

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

PROJECT DOUBS - NO 0201

Objective

To develop a cigarette wrapped with tobacco material.

Status

A first trial, prototype 2P, was made using tobacco wrapper material sample E262 received from HTL and untreated American blend. This blend was specially developed by the Leaf Dept. Width of cut of 2 mm. Taste evaluation by Panel A (ref. 1) was as follows :

"It is quite balanced, round. The reconstituted tobacco marries well with the tobacco taste. It is blended and far more to the cigarette direction than other competitive products. We will repeat trials with other HTL qualities and with treated blend".

According to the panelists, we produced a new batch of treated blend. By using the tobacco wrapper materials, we produced four prototypes with different qualities of tobacco wrapper. These prototypes were difficult to produce on the conventional cigarette maker due to their fragility.

Below are the characteristics of the four prototypes we produced :

Prot. Nr.		9P	11P	12P	13P
Format	[mm]	----------84/25/21/79----------			
Tar	[mg/cig]	25.3	27.4	28.8	25.3
SN	[mg/cig]	1.65	1.66	2.07	1.53
Puff count		11.6	12.2	12.4	14.6
Tob. wrapper Type		E266	E267	CTF881	E261

The taste evaluation by Panel A (ref. 2) was as follows :

"Prototype 9P : Ash is white but burns less well than 11P. Acidic. Not acceptable.
Prototype 11P : Very white ash. The least taste influence will be perceived.
Prototype 12P : Black ash, acidic, cellulosic. Not acceptable.
Prototype 13P : Ash less white, acidic somewhat bitterish. Not acceptable".

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

Plans

Trials will continue with E267, one leaf sheet and treated blend.

References
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[1] Panel A, Project Doubs, November 7, 1988
[2] Panel A, Project Doubs, December 15, 1988

PROJECT VOLGA - NO 0164

Objective

To develop tube-in-tow filters in order to produce 1 mg, 4 mg and 6 mg tar cigarettes (84 mm length) with improved initial puffs.

Status

Referring to our last report (ref. 1), a series of filters with high RTD around the tube were produced in Intertaba (format 19/6). The specifications of these filters are shown in table 1. Cigarettes were made and evaluated. Smoking results versus PMS (23P) were as follows :

Cig. code	19P	22P	20P	21P	PMS (23P)
Blend code	ZA 503 (PMS)				
Format [mm]	84/32/25/7.9				
Tob. weight [mg/cig]	979	980	985	982	662
Dilution [%]	55	57	51	55	55
Tar [mg/cig]	3.9	4.2	4.8	4.3	4.8
SN [mg/cig]	0.30	0.32	0.38	0.34	0.42
CO [mg/cig]	4.8	3.7	5.4	4.1	6.4
Puff count	8.6	8.8	8.6	8.8	8.8
Filter type	--hollow 67--		--Hollow 66--		PMS 110
Tipping paper	6M0.22	6M0.5	6M0.22	6M0.5	6M0.15

Figure 1 shows DPM % versus puff number for these prototypes. As shown, the puff profile of these prototypes versus PMS (23P) have a flat profile which means more DPM in the initial puffs and less DPM in the last puffs.

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Taste evaluation by the Expert panelists (ref. 2) was as follows :

"Prototypes 20P/21P : We remark a blockage. The taste response decreases along the rod.
Prototypes 19P/22P : 19P is somewhat preferred over 22P. However both products are better perceived than 20P/21P.

There is no blockage. The typical PMS taste is somewhat influenced. However lower filter RTD gives much better results".

Plans

Filter with RTD of 949 (tube-in-tow rod) will be used with other technologies like total blend expansion in the context of other projects.

References

[1] Abdelgawad-A, Quarterly Report, July-September 1988
[2] Panel A, Project Volga, December 15, 1988

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

PROJECT VOLGA - TABLE 1

Tube-in-tow rods

Code	1 34-0547-D	2 34-0551-D
Type	Hollow 66	Hollow 67
Total rod length [mm]	114	
Plug length [mm]	19	
Filter material	tow 1.5/46Y	
Hole diameter [mm]	1.4	
RTD without hole [mmWG]	1166	949
Plug wrap	high porous	

Semi finished rods

Total rod length [mm]	96
Plug length [mm]	6
Tow	3.0/35Y
RTD	340
Plug wrap	high porous

Combined filter rods

Total rod length [mm]	100
Plug length [mm]	25
Plug wrap	high porous

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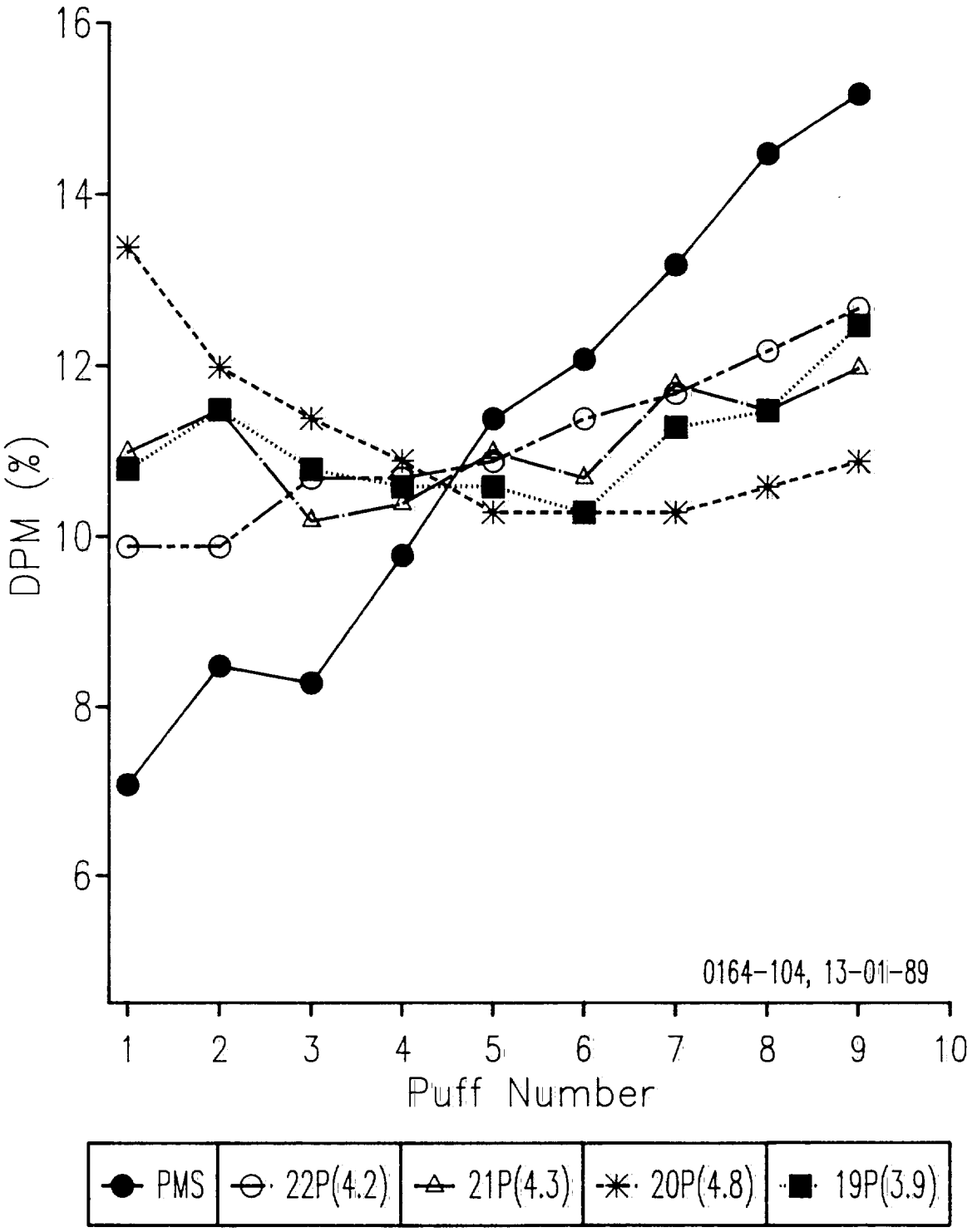
Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

FIGURE 1 - Project VOLGA / Puff-by-Puff-Profile



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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

PROJECT VENOGE - NO 0275

Objective

To develop a 7-9 mg tar cigarette offering mildness, cleanness and freshness.

Status

Referring to our last report (ref. 1), we produced tobacco blends having a small note of menthol (600 ppm) in the aftercut solution. Prototypes 15P, 16P and 17P were produced using these blends. Below are the characteristics of these prototypes, 3C1 being the reference.

Prototype		15P	16P	17P	3C1
Blend		PMS	Thames	--Bingo-low--	
Format	[mm]	----------84/32/27.5----------			
Tar	[mg/cig]	8.1	6.6	6.1	7.0
SN	[mg/cig]	0.64	0.49	0.50	0.66
Puff		8.7	7.8	7.9	8.3

Taste evaluation by Panel A (ref. 2) was as follows :

"Prototype 15P : Gives higher response. It is somewhat to the dark side, more a low level mentholated American blend than a fresh cigarette.
Prototype 16P : It is mild, balanced. Freshness is well perceived.
Prototype 17P : It is to the bright side, slightly harsher than 16P. Freshness is also perceived.

Both 16P and 17P are more in the Vitality objective. The three products will be submitted to AGB in due time".

Plans

Project Venoge is completed. A blind product test will be made in 1989 with prototype 15P and 16P with 550 ppm of menthol in AC instead of 600 ppm.

References
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[1] Abdelgawad-A, Quarterly Report, July - September 1988
[2] Panel A, Project Venoge, November 2, 1988

AHA / 13.01.89

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

DIVISION : NEW PRODUCT DEVELOPMENT

SUBJECT TITLE : CIGARETTE DEVELOPMENT EEC

PERIOD COVERED : OCTOBER - DECEMBER 1988

WRITTEN BY : DE ZUANNI-M (MDZ)

KEYWORDS : cervin,cricket-99,fox,katia,cornu,au,gb, it,db

PROJECT CERVIN (AU) - NO 0235

Objective

Size change on Marlboro Austria from 7.95/80/20/24 mm (MLF06-04) to 7.95/84/23/26 mm (MLB22-04).
Tar : 15.0 mg/cig
SN : 0.90 mg/cig

Status

Prototype 1P made in FTR with a 23 mm filter length was accepted. A confirmation trial was conducted in Austria and the analyis of the products is under way.

PROJECT CORNU (IT) - NO 0189

Objective

To replace the current Mercedes blend by Muratti blend on Mercedes sold in Italy.
Format : 7.95/84/20/25 mm
Tar : 15.0 mg/cig
SN : 1.0 mg/cig

Status

Prototype 4P was selected. A ventilated version was also developed.

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

PROJECT CRICKET-99 (GB) - NO 4508

Objective

Blend optimization on RAH.
Format : 7.85/98.5/25/29 mm
Tar : 14.9 mg/cig
SN : 1.3 mg/cig

Status

Trials with different levels of stems in the blend were conducted. Furthermore, the total cigarette RTD was reduced. Prototype 31P was selected.

PROJECT KATIA (DB) - NO 0803

Objective

SN reduction on the LMF03.
Format : 7.90/84/21/25 mm
Tar : 14.5 mg/cig (DIN)
SN : 1.0 mg/cig (DIN)

Status

Prototype 3P made with a higher filter RTD was selected.

PROJECT FOX - NO 0218

Objective

Introduction of LTR sheets in Marlboro and Muratti blends.

Status

Different quality of LTR sheets were tested. Standard products were produced using the "LTR blends" MLK33 - MLK37 - MPH11 - MAK08. LTR 5052 containing washed Burley stems was selected.

MDZ / 05.01.89

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

DIVISION : NEW PRODUCT DEVELOPMENT

SUBJECT TITLE : CIGARETTE DEVELOPMENT EEMA

PERIOD COVERED : OCTOBER - DECEMBER 1988

WRITTEN BY : LIZZI-R (RLI)

KEYWORDS : project,penny,lansing,antigo,lee,saida, tirana,si,rl,sf,ch

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PROJECT PENNY (CH) - NO 0556

Objective

To develop an American Blend cigarette (LS + KS) with 50 % Swiss tobacco.

Format :	7.90/21.0/84.0 mm	7.90/19.0/79.0 mm
Tar :	open	open
SN :	open	open

Status

Prototypes were selected for further development. Additional trial with AC increase will be made.

PROJECT LANSING (CH) - NO 0240

Objective

Production of Job Bleu Filtre was transferred from Sullana to FTR.

Format : 7.90/19.0/79.0 mm
Tar : 14.0 mg/cig
SN : 0.8 mg/cig

Status

Prototype using cigarette paper BDP 30 instead of Job 130 was selected for production start.

Remarks

Job Nacré (non-filter cig.) will be produced also using cigarette paper BDP 30.

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

PROJECT ANTIGO (CH) - NO 0116

Objective

New BRD blend trial (Nashville) on BPE cigarette.
Format : 7.90/19.0/79.0 mm
Tar : 6.0 mg/cig
SN : 0.4 mg/cig

Status

Prototype 015P was selected. A consumer test is planned.

PROJECT LEE (SF) - NO 0238

Objective

To develop a Chesterfield for Sweden.
Format : 7.90/20.0/79.0 mm
Tar (VTT) : 15.0 mg/cig
SN (VTT) : 0.9 mg/cig
CO (VTT) : 12.0 mg/cig

Status

Prototypes were produced using local materials. Additional prototypes using cigarette paper 110-6 HFE will be made.

PROJECT SAIDA (RL) - NO 0161

Objective

Blend optimization on VA004 (cig. VAF)
Format : 7.90/19.0/79.0 mm
Tar (printed) : 12.0 mg/cig
SN (printed) : 0.8 mg/cig

Status

Prototypes were made with blend using new LTR. Additional prototypes will be made for fine tuning.

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

PROJECT TIRANA (SI) - NO 0305

Objective

Blend optimization on VA004 (cig. VAL)
Format : 7.90/19.0/79.0 mm
Tar (printed) : 8.0 mg/cig
SN (printed) : 0.60 mg/cig

Status

Prototypes were made with blend using new LTR. Additional prototypes will be made for fine tuning.

RLI / 04.01.89

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

DIVISION : NEW PRODUCT DEVELOPMENT

SUBJECT TITLE : STUDIES AND MODELLING

PERIOD COVERED : OCTOBER - DECEMBER 1988

WRITTEN BY : BADERTSCHER-T (TBA)

KEYWORDS : chisel, tobacco, rod, filtration

PROJECT CHISEL - NO 8501

Objective

To investigate the influence of tobacco rod compacity on mainstream and sidestream deliveries including puff by puff profiles.

Status

To determine the filtration coefficient of the tobacco rod, cigarettes were made at three different compacities and two different rod lengths. As additional parameter, two cigarette papers were used at different permeability levels (WP 60 = 50 CU and E13146 = 22 CU).

The cigarettes were weight selected at $\pm$ 15 mg and smoked in the Smoke Laboratory (routine) and in Research Division for the determination of delivery per puff (profiles) of DPM, SN and CO.

Results

To determine the filtration coefficient u (diffusion coefficient D for gaseous smoke components) the ignition puff and the last puff were not considered.

The puffs between were correlated in the following manner :

$$\ell n\ Y_i = -\mu \times butt_i + \ell n\ A$$

where Y_i = yield for puff i of smoke component Y [mg]

$butt_i$ = butt length acting as filter for puff i [mm]

μ = filtration coefficient

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

Remarks

The butt length was not measured, it was determined from the number of puffs and the total length smoked. The sequence (puff plus smouldering period) was considered as constant during smoking.

At the moment, only profiles of long cigarettes (100 mm / filter 21 mm) were available.

Cigarette paper WP 60 (50 CU air permeability)

Tob. density	Firmn.	μ_{DPM}	μ_{SN}	D_{CO}
[mg/ml]	[mm]	[1/mm]	[1/mm]	[1/mm]
246	3.47	0.0105	0.0130	0.0137
278	2.71	0.0115	0.0148	0.0131
290	2.41	0.0142	0.0163	0.0155

Cigarette paper E13146 (22 CU air permeability)

Tob. density	Firmn.	μ_{DPM}	μ_{SN}	D_{CO}
[mg/ml]	[mm]	[1/mm]	[1/mm]	[1/mm]
249	3.38	0.0083	0.0098	0.0095
277	2.58	0.0094	0.0118	0.0083
292	2.37	0.0110	0.0126	0.0077

Conclusions

For equal tobacco density the cigarette paper E13146 gives slightly better firmness values.

We can observe the expected increase of the filtration coefficient for DPM and SN when increasing tobacco rod compacity.

The filtration coefficients determined this way are influenced by several parameters :

- Filtration of the tobacco column itself
- Dilution of the smoke behind the burning cone through the paper
- Higher puff volume as the cigarette paper surface decreases with each puff (less air entering through the cigarette papers)
- Redistillation of condensed and filtered smoke on the tobacco column.

For this reason the cigarettes made with the paper having lower permeability gave systematically lower "filtration coefficients".

The coefficients found for DPM are always lower than those for Nicotine (SN). This is the contrary of values reported in the literature (ref. 1 and 2).

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

This may be due to the method of determining the DPM by spectrophotometry which gave lower yields on a per cigarette basis than those found by QA with routine smoking. The method is being reviewed by Research Division.

No systematic effect of the firmness was found on the diffusion coefficient of carbon monoxide (CO). The influence of the density on the formation of CO seems more important than the changes in the diffusion rate. However, the determined diffusion coefficients are significantly lower with the cigarette paper of lower air permeability.

Plans

The cigarettes will be smoked again with the modified analytical method for determining DPM per puff to check if it influences the shape of the profile e.g. the filtration coefficient.

Another series of prototypes is planned with smaller cigarette diameter to determine its influence on the filtration of the tobacco rod.

References
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[1] E. Byckling
Untersuchungen der Filterwirksamkeit des Tabakstranges bei Cigarettes verschiedener Härte.
Beitr. Tabakforsch. 8 (6), 1976, p 382.

[2] T. Yamamoto et al.
Effect of cigarette Circumference on Weight Loss during Puffs and Total Delivery of Tar and Nicotine.
Beitr. Tabackf. Int. 12 (5), 1984, p 259

TBA / 13.01.89

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

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QUALITY ASSURANCE

Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

DIVISION	:	QUALITY ASSURANCE + TECHNICAL SERVICES
SUBJECT TITLE	:	MATERIAL TESTING
PERIOD COVERED	:	OCTOBER - DECEMBER 1988
WRITTEN BY	:	Kürsteiner-C. (CHK)
KEYWORDS	:	Force, blank, sliding, spring, crushing, filter, tipping, paper, inner foil, varnish, bundle.

INCOMING INSPECTION FOR FTR

The incoming inspection of non-tobacco materials used by FTR gave the following results :

- 463 deliveries were inspected
- 36 deliveries were refused

Refusals concerned : 8 cigarette material supplies
29 packaging material supplies

Incoming inspection of inner foil for mentholation for affiliates continued.

QUALIFICATION TRIALS

The qualification trials for cigarette and packaging materials carried out during the reporting period were guided by the objectives of :

- improving the quality of our products
- standardizing the materials used in Europe
- evaluating alternative suppliers

Display cartons MAJ-CH

New MAJ display cartons were tested on the machine to check the resistance of the gold bronze offset printing. These tests were positive and displays were produced for Marketing. Badly converted display cartons had the design off-center, of which the supplier was informed.

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

Inner foil

In order to qualify a second supplier an initial trial was made on the HLP 5 with inner foil used for the MLK cigarette. The test was positive, an industrial trial will be made with this material.

In order to qualify a second supplier on the 80mm segment of aluminium foil used on the HLP2, an industrial trial was made. The test was negative due to bad foldings on the finished product.

In order to qualify a second supplier on the 116mm and 111mm segment of aluminium foil used on the GD-X1, initial trials were made. The tests were negative due to sliding problems on the machine. A new trial will be made.

In order to eliminate the lacquered foil used at FTR, a special trial was made with an inner foil with an "abrasion resistant coating". The test was positive, however the foil cannot be used for mentholation.

A trial with a 7/30 quality inner aluminium foil was tested on the GD-X2 with the objective of improving runnability. The test was positive, however management still has to decide whether they will accept a price increase due to the higher paper grammage.

Teartape

Industrial trials were made with new types of teartape which should replace the actual one which adheres with hotmelt. The trials were negative due to bad aspect of the finished product.

HL blanks

A series of new HL die cuts were tested on the MLZ brand in order to improve runnability and finished product quality. The objectives were to select the most appropriate HL die cut out of the various versions tested. One version showed positive results, but some improvements have still to be made on it.

Polypropylene

In order to requalify the process of a polypropylene supplier, various initial trials were made on different production machines in order to check runnability and finished product quality. Results were positive.

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

ASSISTANCE TO LICENSEES AND HEADQUARTERS

Various tests were carried out upon request.

SUPPLIER CONTACTS

Correlation program continuing.

SPECIAL PROJECTS

An instrument evaluation for the measurement of diffuse reflectance factors of papers and boards was made. The application is for brightness, opacity and colour measurements. The most appropriate instrument was chosen for Philip Morris Europe applications.

The area Material Monitoring and Incoming Inspection have been partially reorganized. All information on material release and blocked material is now made via computer, thus decreasing inspection lead time and giving faster availability of the material for production if found to conform to PM requirements.

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CHK/vep/January 13, 1989
qr488mtchk

Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

DIVISION : QUALITY ASSURANCE + TECHNICAL SERVICES

SUBJECT TITLE : CIGARETTE AND SMOKE ANALYSIS

PERIOD COVERED : OCTOBER - DECEMBER 1988

WRITTEN BY : Hofer-R. (RHO), Senehi-F. (SEF)

KEYWORDS : Legislation, Denmark, Portugal, TSE, Turkey, SASO

DANISH LEGISLATION (SEF)

Following an agreement between the Danish Tobacco Industry and the Ministry for the Interior, the tar and smoke nicotine values should be printed on the packets.

The ISO confidence interval of 15% for tar and SN was adopted as the actual tolerance limits with a minimum of +/- 1 mg for tar and +/- 0.1 mg for SN.

Furthermore the mention "Mild" "Medium" and "Strong" should be printed according to the tar level.

Mild	:	under 16 mg
Medium	:	16-20 mg
Strong	:	20 mg and over.

PORTUGUESE LEGISLATION (SEF)

We have recently been informed that the tolerance limits for brands sold in this country are 15% for tar and smoke nicotine values but at least 1 mg for tar and 0.1 mg for smoke nicotine (1).

VISIT OF TSE ENGINEERS (TURKISH STANDARDS INSTITUTE) (SEF)

The objective of this visit was to give relevant information which enabled the TSE visitors to recognize the validity of ISO-DP 3287-1988, excluding channel-ventilated cigarettes from the application field of ISO 4387-1987 (2).

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

All necessary technical information was given and various tests were carried out with the Puff Parameter Analyzer (PPA) and Filtrona 300 smoking machines. They showed that:

Tar and smoke nicotine deliveries increase when ventilation decreases as channels are progressively blocked. These tests enable us to explain why the actual smoke deliveries of smokers are higher than those determined according to ISO (see Appendix 1, graphic representation).

PROJECT SASO (RHO)

A. Objective

To acquire a high level of credibility, SASO's chemists need practice. In order to confirm their expertise, after an initial internal training session, a round robin test involving PME R&D was organized (3).

Their level of self-confidence in unexpected situations has to be increased so that they can perform troubleshooting by themselves.

B. Status

The SASO smoking laboratory got excellent publicity from the Kuwaiti TV and analysis requests have been made by several importers.

Because SASO's chemists are lacking self-confidence when they are faced with a break-down or unexpected situation, these requests had to be postponed. We have been asked to supply them with assistance so that they can fix the equipment.

It is now obvious that more efforts will have to be invested in order to bring the chemists to a point where they can understand why equipment does not work and how to fix it. This can be achieved by letting them experience problems which they should report to us so that we can assist them by phone or, depending upon the seriousness of the situation, by being on the spot.

C. Plans

1. Monitor, as far as possible, their results.

2. Show them that we feel involved when a serious problem occurs.

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

PRODUCT REPORTS (SEF)

Product Reports were written for the following new brands:

Brand	Printed values	Manufacturer	Country of sale
Boston KS/F	Tar/SN=15/1.1	Landewyck	Belgium
Benson & Hedges Ultra legere KS/F	Tar/SN=3.9/0.30	Gallaher	France
Camel Extra Mild KS/F	Tar/SN=4.6/0.46	Reynolds, DB	France
Capri 100/F	Tar/SN=8.9/0.89	BAT, DB	France
Camel Lights KS/F	Tar/SN=6/0.6	Reynolds	West Germany
Windsor KS/F	Tar/SN=2/0.2	Brinkmann	West Germany
Capri 100/F		Bat, DB	Italy
Now KS/F	DPM/SN=1.4/0.20	Reynolds, DB	Italy
Rothmans Leggera 100/F		Rothmans	Italy
R1 Slim Line 100/F		Reemtsma, DB	Italy
Gauloises Blondes Legeres KS/F	Tar/SN=9/0.8	Rinsoz & Ormond	Switzerland
Casablanca KS/F	Tar/SN = 7/0.7	Austria T.	Switzerland
Black Cat Superkings 100/F		Rothmans	United Kingdom
Craven "A" Menthol KS/F		Rothmans	United Kingdom

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

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1. Report by Senehi-F. dd. December 15, 1988

2. Report by Senehi-F. Zuber-J. dd. December 22, 1988

3. Report by Hofer-R. dd. October 10, 1988

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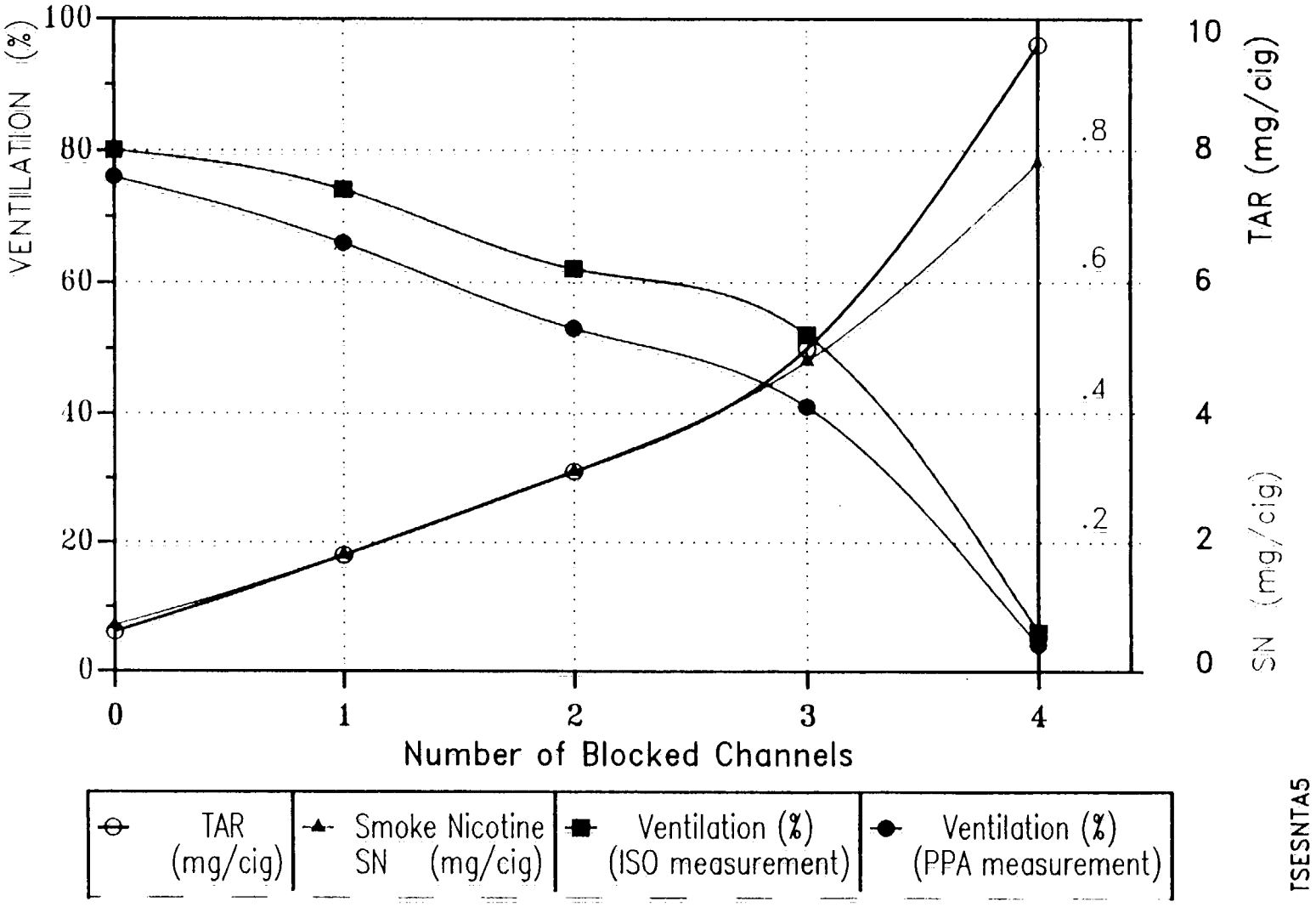
Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

ISO Mechanical Smoking of BARCLAY Cigarettes
TAR, SN & VENTILATION as a Function of Blocked Channels



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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

DIVISION : QUALITY ASSURANCE + TECHNICAL SERVICES

SUBJECT TITLE : TOBACCO MONITORING

PERIOD COVERED : OCTOBER - DECEMBER 1988

WRITTEN BY : Orsan-G. (GUO)

KEYWORDS : tobacco, monitoring, reconstituted, uzorak, tla, tqa, expanded, saturne, eec, br, ks, audit, capacity, stem, strip, distribution, oven volatile, weight, fox, sp, objectionable, cutfiller, ftr

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TOBACCO LOT ANALYSIS (TLA)

Assistance to the PM-EEMA Leaf Department

At the request of PM-EEMA Leaf Department, a fourth sample of reconstituted tobacco ex Podr Slatina, Jugoslavia, was submitted to TLA analysis. This sample was coded UZORAK IV. The complete results will be sent to the Leaf Department concerned.

Assistance to the PM-EEC Leaf Department

In the context of Project EEC, fifty-six (56) samples of tobacco from various origins (FR, IT, GR, DB, BE, PO) were sent to Onnens for TLA analyses. The scope of this project is to collect analytical data on the European tobacco types/qualities which are not bought by PME and maybe find some grades which might be suitable for PME blends.

Status: The analyses of these samples started at a rate of 3-4 samples per week.

Assistance to other R&D Services

At the request of R&D Research Department, sixty-three (63) Australian tobacco samples (strips) were cut to enable further determinations on cut rag, related to Project SATURNE.

Stem analyses for PME Affiliates

The TLA group is also providing assistance to the PME affiliates by preparing samples of non-treated flue-cured stems for TA, RS, $N\text{-}NH_3$ and $N\text{-}NO_3$ determinations. For 1988, 31 samples were

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

received, prepared and the results of each individual sample sent to the Leaf Department concerned (FTR and PMG).

TLA LABORATORY PROCESSING CAPACITY IN 1988

The target assigned to R&D for TLA in 1988 was to process 1000 samples during the year. As shown hereunder, and taking into consideration that the TLA processing was stopped for 2 months (March-April) due to the overhauling of the TLA cigarette maker and the move of the TLA group from Serrières to Onnens, this objective was recalculated "prorata temporis" and was met. In fact the new objective was set at 833 samples and during the 10 months of processing 873 samples were completed.

TLA SAMPLES THROUGHOUT 1988

MONTH	RECEIVED		PROCESSED		FINISHED		STOCK
	month/cumul		month/cumul		month/cumul		
JAN	119	119	102	102	66	66	88
FEB	65	184	108	210	74	140	44
MAR	3	187	1	211	89	229	46
APR	0	187	0	211	25	254	46
MAY	162	349	53	264	0	254	154
JUN	161	510	75	339	42	296	241
JUL	103	613	84	423	96	392	255
AUG	175	788	133	556	87	479	297
SEP	62	850	89	642	119	598	267
OCT	91	941	63	705	46	644	294
NOV	182	1123	141	846	14	658	335
DEC	55	1178	27	873	103	761	363

In comparison with 1987, the number of samples in stock increased from 46 in April to 363 at the end of December but this was mainly due to the fact that numerous TLA analyses had to be made for special projects such as project BRAZIL (90 samples), project EEC (56 samples) etc, as well as the many standard samples received from the affiliates.

Attribution of TLA capacity

The attached charts show the break-down of the samples analysed in 1988 per affiliate and per tobacco type.

In the "per affiliate" distribution, significant trends were observed in comparison to 1987:

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

- PME Leaf (from 5% to 12%)
- R&D - Others (from 1% to 6%)

In the "per tobacco type" distribution, we observed that in relation with the above-mentioned increases, the number of trial samples (mainly sent by PME-Leaf and R&D) increased from 1% in 1987 to 14% in 1988.

Processing capacity for 1989

No increase of the processing capacity is foreseen in 1989, and therefore it will remain at 1000 lots/year.

TOBACCO QUALITY AUDIT (TQA)

The audit program consists of the physical analysis of offshore flue-cured and Burley tobacco strips for :

- strip size distribution
- stem content and size
- oven volatiles
- net tobacco weight

The objective is to provide the PME Leaf Buyers with the necessary information to identify tobacco processors in need of processing improvements by comparing the obtained audit results of the different tobacco processors per country and setting specifications for the audited parameters by grademark, tobacco type and origin.

Status

1987 Korean purchases have been audited and the audit report has been transmitted to the PME Leaf Department (14 flue-cured and 4 Burley samples).

1988 Brazilian purchases have been audited. The audit report will be transmitted to the PME Leaf Department (34 flue-cured and 5 Burley samples).

Follow-up

We will then audit the 1988 purchases of the following countries:

- Argentina
- Italy
- Mexico

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

Filler analyses for PM departments

The TQA group is also providing assistance to other PM departments in preparing samples for filler analyses (TA, RS, $N\text{-}NH_3$, etc). This work is mainly done for RCB and ET produced in Onnens. Each month, the results are collected and a report is issued and sent to the persons concerned. For 1988, 526 samples were received, prepared and sent for analysis to the R&D Analytical Services and Smoking Lab Groups. This represents a 6% increase when compared with the number of samples received in 1987.

Assistance to the PM-EEC Leaf Department

In the context of Project FOX, five (5) samples of homogenized tobacco were analysed for size distribution. The results showed that 95 to 99% of the recon. strands were retained on the 1" X 1" screen. The complete results were transmitted to the persons concerned.

Assistance to other R&D Services

At the request of Mr. F. Lopes, determinations of the stem content of cut filler were carried out on two blends ex FTR: ML-022 and BR-001. The scope of this test was to determine the stem size distribution and relative percentages in cut filler samples taken at the exit of the garniture of a cigarette maker. The results together with the respective collected stems were given to the requester for further discussion with FTR production.

Assistance to PMG Engineering Department

Determinations of stems in cut filler were carried out on five (5) samples of blend ML-039 taken at the exit garniture of a PROTOS 100 cigarette maker. This test was requested by PMG-QA in relation with the Pre-Qualification trial of the new PROTOS 100. The results obtained were sent to the requester together with the respective stem samples.

Assistance to PM-Spain

Further to problems with the presence of expanded stems in cigarettes, all the tobacco strips in stock in Onnens (4 lots) were submitted to a stem content determination in order to check the percentage of objectionable stem and the total stem percentage in the strips sent by PM-Spain for expansion at Onnens plant. Five cases of each lot were selected and sampled according to TQA procedure. The results obtained are as follows :

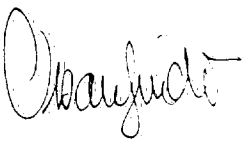
2028635405

Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

	% 3/32" (OBJ)	% TOTAL STEMS
PME standard	less than 0.25	less than 3.00
Lot 70250	1.19	4.98
Lot 70248	0.89	4.29
Lot 70249	0.75	4.07
Lot 70252	1.76	6.44

None of the four (4) lots we analysed met the PME specifications.
A report will be sent to PM-Spain.

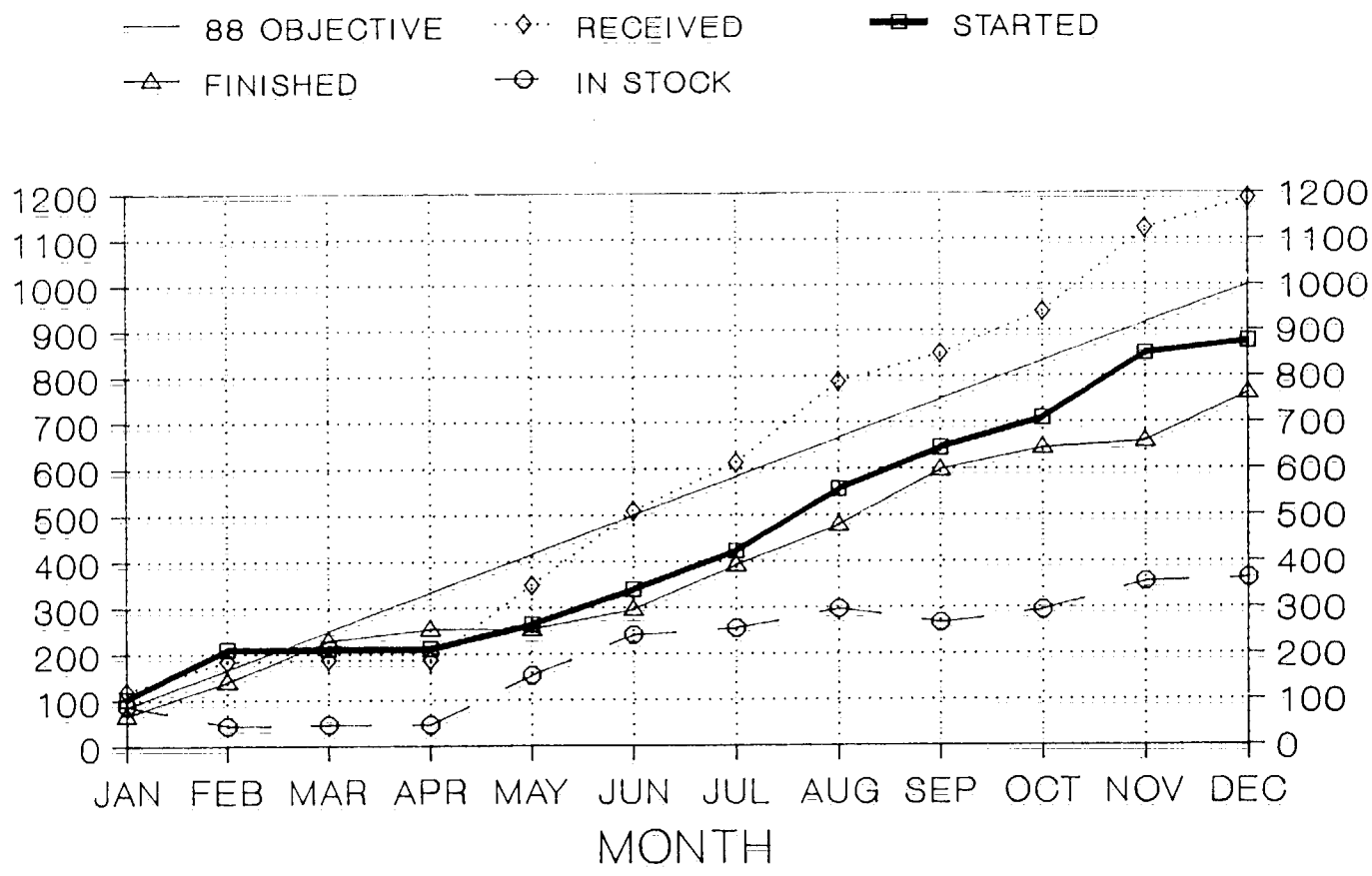


GUO/vep/January 12, 1989
qr488tmguo

2028635406

Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

1988 TLA THROUGHPUT



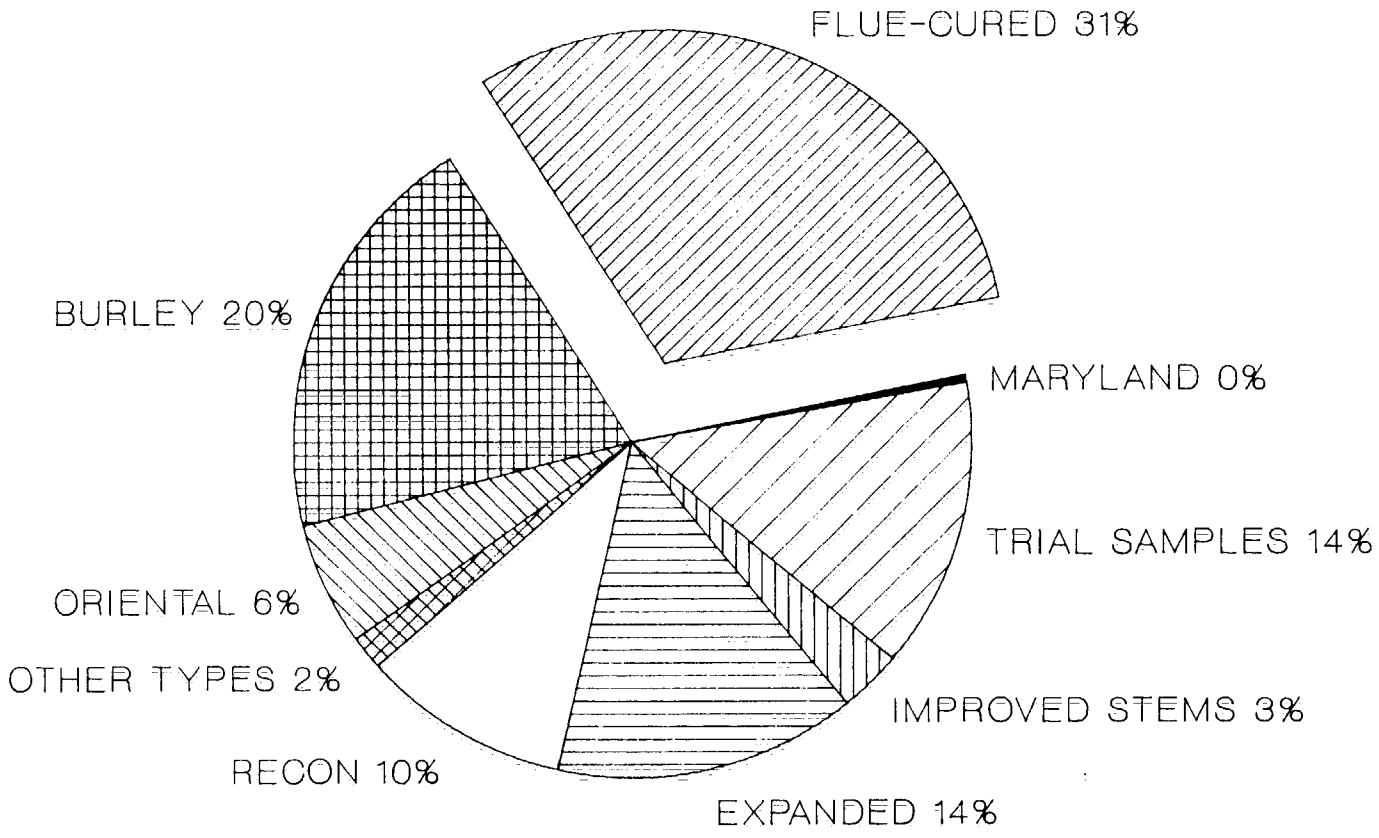
EVOTLA88.DOC

20286354O7

Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

1988 TLA SAMPLE BREAKDOWN

per tobacco type



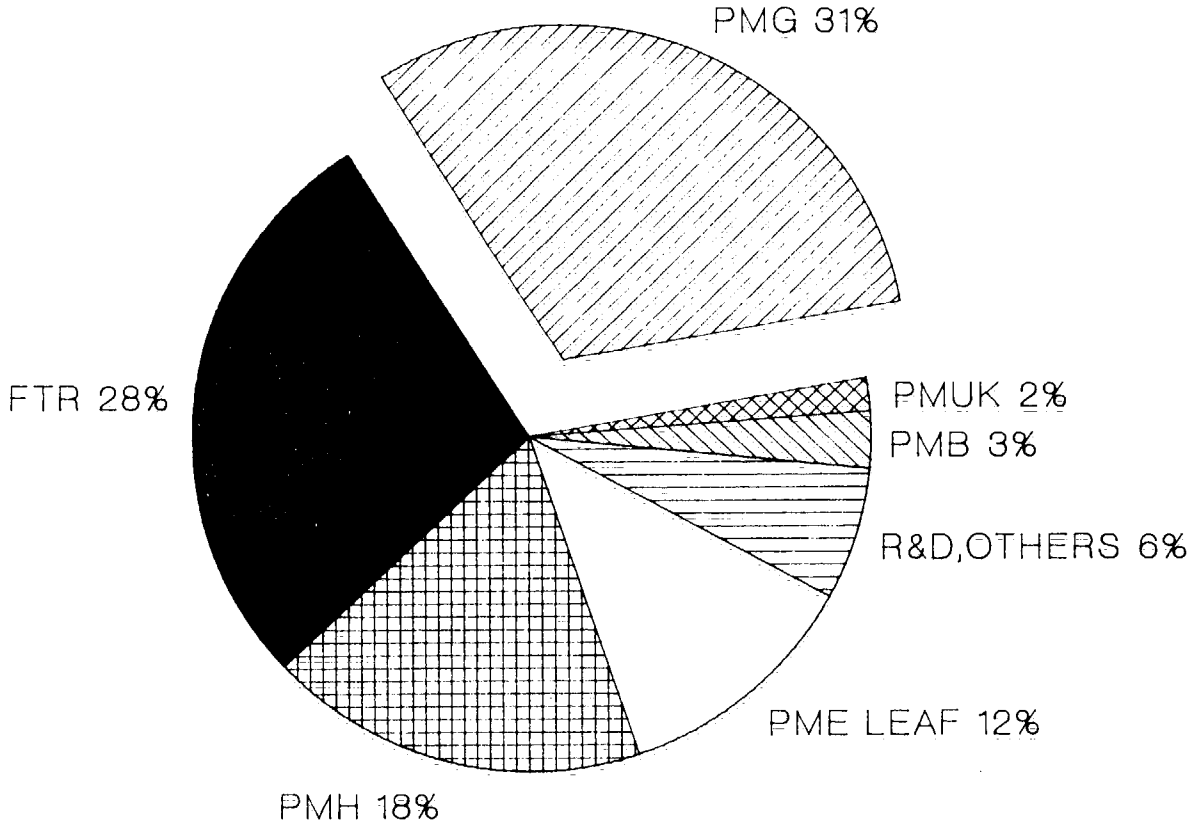
TTBK88.DOC

2028635408

Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

1988 TLA SAMPLE BREAKDOWN

per requester



REBK88.DOC

2028635409

Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

DIVISION : QUALITY ASSURANCE + TECHNICAL SERVICES

SUBJECT TITLE : ANALYTICAL SERVICES

PERIOD COVERED : OCTOBER - DECEMBER 1988

WRITTEN BY : Turpin-D. (DAT)

KEYWORDS : tipping, seam, glue, filter, gelatin, flavor, charcoal, menthol, licorice, humectant, alu-foil, paper, casing

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1. ASSISTANCE TO FTR

1.1 INCOMING INSPECTION

The objective of Incoming Inspection is to ensure the constant quality of ingredients, filter additives and glues used by FTR and to make sure that each delivery complies with PM specifications. During the reporting period, 94 deliveries were checked by Analytical Services. One was rejected :

- TENSOCHEMA physical mixture of 50% MPEG 550 + 50% MPEG 750, Incoming Inspection sheet 1686: the defect was a light brown color caused during storage by a poor resistance of the drums' inside coating. A replacement shipment was sent in resistant plastic drums. Investigations are currently being made by the supplier to find suitable metal drums.

The Cochise production plant in Onnens had serious trouble grinding the Suchard cocoa peels due to their high fat content. Sieving solved the problems for the peels from Suchard-Lorrach. Investigations to evaluate possible solutions for the Suchard-Berne peels are under way with the collaboration of the supplier.

2028635410

Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

1.2 FOIL-MENTHOLATING

Menthol content was routinely determined :

- on alu-foil for 23 various productions of mentholated bobbins for FTR and export,
- on cigarettes for 6 various productions of FTR mentholated brands.

All results complied with specifications.

Based on the last three years' analytical data, tolerances were calculated for the cigarette menthol content of FTR brands. A statistical sampling procedure is being investigated.

1.3 SPECIAL PROBLEMS

Standardisation of menthol solutions

Trials were initiated to solve problems of supplies, workload and quality. The evaluation of the first North Pole prototypes showed a correlation between SFM-A-1 and SFM-D solutions. Further prototypes will be evaluated in January.

Vapor tunnel for Burley casing

Investigations are currently being made to confirm the improvement due to the installation of the above equipment.

Deposit formed in the triacetin-spray-applying-system on KDF 2

The deposit was identified as a PVA polymer probably due to the accidental presence of glue in triacetin.

Electrostatic perforation

Tipping papers from TANN and BENKERT were analysed in order to detect whether their metal content could affect the perforation. Determinations of iron oxide, titanium dioxide and calcium carbonate were made. The results did not point out any appreciable difference between non-perforated and electrostatic perforated papers from the same supplier: either TANN or BENKERT.

2028635411

Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

2. ASSISTANCE TO AFFILIATES

FAMA-AC solution

Trials were made to solve problems due to precipitation during storage and consequent blocking of filters during the transfer of the solution from tank to primary. The recipe was modified further to the agreement of Richmond flavor specialists with our proposals.

Block licorice from MENOZZI delivered to PMH

The anti-sticking agent detected at the surface of blocks was identified as palm oil. It will not be used any longer by the supplier.

Humectant analyses at PMG-M

The implementation of the new method based on GC with wide bore column will be finalized in January.

Storage of tobacco batches at PMG-M

Further to the detection of a sour smell from a ML056 batch, analyses and investigations were made. Recommendations on the maximum storage period were sent to PMG.

Foil mentholating for PMG-B

Investigations were made to solve working problems for packaging on GD-X2. A program was set up. Improvement occurred by moving the nozzle to the foil center. Further trials will be aimed at spreading menthol on the whole surface of the paper layer. The effect of the latter will be investigated.

Foil mentholating for PMH

Evaluation of menthol loss during long storage of mentholated bobbins at 35° C is under way.

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

3. ASSISTANCE TO HEADQUARTERS AND LICENCEES

Foil mentholating for ATO-Finland

A consumer test is in progress in Finland for the evaluation of Marlboro Menthol produced with mentholated foil.
A suitable alu-foil was supplied by VAASEN for production trials of Belmont Menthol. One bobbin will be mentholated in January 1989.

Chloride in tobacco

Chloride content was determined in tobacco samples of various origins.

Triacetin used at SNTA

Analyses were made to confirm the HENKEL origin. Results were similar to those of HENKEL samples already examined.

RL SLATINA - Yugoslavia

Analyses were made to check the absence of DEG. The latter was not detected.

90-931 PC solution - Egypt

A sample taken from a doubtful drum was examined.
Recommendations were made to destroy the solution.

4. ASSISTANCE TO OTHER GROUPS

Material Testing

Finish oil content and single denier were routinely determined on samples of tow for incoming inspection by both traditional and infraalyser methods.

Additive content of some cigarette papers is being routinely determined to evaluate its effect on paper combustion speed.

Triacetin content was determined in MLK filters from SNTA for quality control.

2028635413

Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

Additive and filler content were determined in various cigarette papers :

- from GLATZ and PMD for analytical evaluation,
- from WATTENS for incoming inspection.

A procedure was developed for the determination of surface pH of boards. Tests were made on ALGRO samples.

Manufacturing Services

Base flavor reference samples from PMI were examined for future incoming inspection.

Tonka flavor was examined for project AGATE.

Investigations to set product specifications for glues are currently being made. The situation and plans about glues were presented at the Materials Trials Concept meeting.

Activated charcoal and silicagel content of various plug-space-plug filters by BAUMGARTNER was determined to update specifications.

Investigations are being made to issue safety sheets for all solutions produced at FTR.

Product Research

Analyses of humectants, water, ethanol and sugars were made for the development of an infraalyser method for the incoming inspection of liquid flavors.

Humectant analyses were made on various RL samples for project ORDER.

Product Development

Menthol content of cigarettes was determined for projects ALAIN, JORG and YANN.

Microbiology

Calcium, sodium, potassium and magnesium content was determined in tobacco extracts for project TITANIA.

2028635414

Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

Quality Audit

Menthol content was determined in PM and competitors' brands for CIR.

Further to the bad running of SASO smoking lab humidifier, various samples of supply water, drain water and deposits were analysed. The results pointed out a strong electrode corrosion of the defective humidifier.

Process Development

Humectant content of various tobacco samples was determined for projects ADMOIST, CAIMAN, FOX, PICASSO and RODEO.

Carbonate content of LTR samples was determined for project FOX.

Calcium, magnesium, phosphate and silicium dioxide content of dust and stems samples was determined for project PICASSO.

Tobacco Quality Audit

Humectant and silicon dioxide content was routinely determined on samples from various tobacco batches.

An interlaboratory test was made between PME-QA and Park 500 for the determination of humectant content in RL. PG results were similar. Glycerin results of Park 500 were slightly higher than those of PME-QA. Trials will be resumed after technical modifications to be made by Park 500.

5. QUALIFICATION TRIALS

A new product is accepted only if it has successfully passed the following tests and trials :

- Analytical evaluation to examine the product's compliance with PM specifications and German legislation.
- Production of cigarettes and subjective evaluation by Panel B and Panel A.
- Machinability trials.
- Industrial trials.

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

5.1 QUALIFICATION OF ALTERNATIVE SUPPLIERS

The following trials were initiated to qualify alternative suppliers of ingredients, filter additives and glues.

- Physical mixture of 50% MPEG 550 and 50% MPEG 750 from BP. A first industrial shipment will be delivered to FTR in January.

- Synthetic menthol from TAKASAGO. Analytical evaluation was successful. Subjective evaluation is planned for the next three months.

- Natural menthol "Glacier Brand" from China, supplied by FUERST DAY LAWSON. Analytical evaluation was successful. Subjective evaluation is planned for the next three months.

- Block and powder licorice from SISTAS. Samples were requested for analytical evaluation.

- Block licorice 447 and 448 from EVD. Analytical evaluation was successful only for sample 448. Trials with 447 were consequently abandoned. Subjective evaluation of 448 is planned for the next three months.

- Propylene-glycol : options to DOW CHEMICAL. Further to the success of their analytical evaluation, the subjective evaluation of propylene-glycols from ARCO-FRANCE, ERDOELCHEMIE and HUELS is planned for the next three months.

- Triacetin Estol 1479 from UNICHEMA : qualification for Raffles. The subjective evaluation was not conclusive and will be resumed.

- Powder licorice from FERTILIZERS & CHEMICALS. Due to taste variations of cigarettes produced at PMG with the first industrial shipment, industrial trials were resumed at FTR to check the effect on taste. The subjective evaluation by Panel A was successful. A decision will be made after the results of the evaluation under way by Panel D.

- Cielok 303-1772 seam glue from NATIONAL STARCH. An industrial trial is under way at FTR.

- 6663-53-E seam glue from PUJADAS. The analytical evaluation was successful. Trials will only be resumed if we are again limited to one supplier.

- Lesso 5067/1 seam glue from LAESSER. Due to problems on Mark 9 at PM-UK with the currently used seam glue, trials were initiated to qualify Lesso 5067/1 for Raffles. Subjective evaluations by Panel A were not conclusive. Trials will be resumed in the next three months.

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

- K 5675 D seam glue from SWIFT-UK. As above, trials were initiated for Raffles. The analytical evaluation was not successful.

5.2 QUALIFICATION OF REPLACEMENT PRODUCTS

The possibilities of solving several technical problems were investigated by replacing currently used ingredients, filter additives or glues :

- Lesso 1520 tipping glue from LAESSER. The trials were aimed at decreasing the pressure on the application rolls and getting an easier regulation of the ventilation. Further to the success of an industrial trial, FTR will use Lesso 1520 in replacement of Lesso 1516 G.
  Local confirmation trials were successful at PMH and PMB. They are still under way at PMG.

- Lessoflex B2G gelatin seam glue from LAESSER. The trials to investigate the possible use of gelatin as a natural seam glue are temporarily delayed due to production constraints at PMG-B. They will be resumed in the near future after setting up a program in collaboration with PMG and establishing a protocol with R&D Richmond to determine pyrolytic components from gelatin.

- Lesso 2049 hot melt filter glue from LAESSER. A longer durability of belts is expected. Subjective evaluation is under way.

- PICA activated charcoal RC 328. Due to a finer granulometry than that of the currently used charcoal, machinability and filter quality can be improved. Trials will be resumed for subjective evaluation and determination of the suitable charcoal amount in filters.

- HAARMAN & REIMER synthetic menthol pellets. Less lumping than with the currently supplied crystals is expected. An industrial trial is planned.

D. Turpin

DAT/vep/January 11, 1989
qr488asdat

2028635417

Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

DIVISION : QUALITY ASSURANCE + TECHNICAL SERVICES

SUBJECT TITLE : VISUAL QUALITY AUDIT

PERIOD COVERED : OCTOBER - DECEMBER 1988

WRITTEN BY : Jacquet-R. (RFJ), Morelli-M. (MMO)

KEYWORDS : market, survey, handbook, standards

ASSISTANCE TO Z.P.T. FACTORY, KRAKOW, POLAND (RFJ)

A visit was paid to the Z.P.T. factory to train the quality control staff, give them information on quality criteria according to PME standards and make them generally more concerned about quality.

Operators and fitters were also given precise information on PME quality requirements.

The quality level observed should be improved by making several suitable adjustments and technical modifications.

Recommendations were made to AOD (1).

MARKET SURVEYS (RFJ)

The following markets were audited in 1988:

Belgium - France - Germany - Italy - The Netherlands - Switzerland.

Inspection is completed on all markets.

Reports are in progress and will be issued during the forthcoming quarter.

2028635418

Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

HANDBOOK FOR VISUAL QUALITY AUDIT OF FINISHED PRODUCTS (MMO)

Objective

Develop a revised Handbook for Quality of Finished Products, jointly with PM-USA. Implementation of the new procedure is expected to take place within PME on January 1st, 1990.

Status on Packaging

The final draft of new packaging defect definitions has been established jointly with PM-USA and will be approved in the first quarter 1989.

Status on cigarettes

A draft of new cigarette defect definitions has been prepared and was sent to the affiliates to have their comments.

Plans

- Establish a final draft of cigarette defect definitions jointly between PM-USA and PM-QA (first quarter 1989).
- Develop the inspection procedure of packaging (1st quarter 1989).
- Establish a parallel test on packaging between PM-USA and PME-QA (1st quarter 1989).

REFERENCES

(1) Report by Jacquet-R. dd. November 3, 1988

2028635419

Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

DIVISION : QUALITY ASSURANCE

SUBJECT TITLE : SUBJECTIVE CIGARETTE EVALUATION

PERIOD COVERED : OCTOBER - DECEMBER 1988

WRITTEN BY : Monnin-E. (EMO)

KEYWORDS : panel, discriminative, assistance, concept

DISCRIMINATIVE PANEL

Panel B

The R&D Panel B evaluated 77 prototypes this year using the DDD-method (PME 720). An average of 29 observations per test was obtained. Fifty-four prototypes were found : "not different to corresponding standards", twenty-three were significantly different.

In order of importance, the main brands smoked were :

	% of tests
Marlboro	54
Muratti	21
Brunette	8
Philip Morris	3
Others	14

The tests were requested by :

	% of tests
Manufacturing Services	40
Material Testing	25
Analytical Services	18
Panel Testing	11
Research	5
QC-FTR	1

2028635420

Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

ASSISTANCE TO ITALY

On November 29 and 30, the Head of Product Quality Audit went to the Bologna Factory. The purpose of the visit was to attend the first session of the new Smoking Panel as well as the Panel A session which had to set the Marlboro Taste Standard for local production.

PME SENSORY EVALUATION CONCEPT

The present Panel Organization is being reviewed in order to define improved future concepts. With this object, a two-day visit was paid to Bergen op Zoom on November 9 and 10 with the FTR-Leaf Expert. The aim was to become familiar with the PMH-Panel Structure (1).

In the same way, the Head of the PMG-Munich Panel Organization and a Panel A member came to Neuchâtel on November 21 and 22. The purpose of the meeting was to compare views on a PME Sensory Evaluation concept.

At this stage, basic terms of the project are as follows :

1. Review/revise objectives of the sensory evaluation with emphasis on QA type of activities.

2. Define the types of panel needed by HQ, R&D and Affiliates.

   At present, three types are considered :

   - Alarm panel able to detect major defects in daily production.
   - Confirmation panel which could ratify the existence of a problem as well as take care of current QA panel activities (e.g. qualification trials)
   - Leaf panel which would be the link between local and HQ sensory evaluations.

3. Define/revise methodology most suited to each of the above panels.

REFERENCES

1. Visit report from Monnin-E.,dd. November 16, 1988

EMO/January 16, 1989
qr488sceemo

2028635421

Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

DIVISION	:	QUALITY ASSURANCE + TECHNICAL SERVICES
SUBJECT TITLE	:	INFESTATION CONTROL
PERIOD COVERED	:	October to December 1988
WRITTEN BY	:	Freymond J.-M. (JMF)
KEYWORDS	:	infestation, control, program, dianex ftr, fogging, affiliate, licensee

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INFESTATION CONTROL PROGRAM

OBJECTIVE

Implement the new PM infestation control program in all PME affiliate and licensee factories and warehouses.

STATUS

Visits were made and presentations of the new program were given to the management of :

- PMG-Munich on October 3 to 5, 1988
- PMG-Berlin on October 31 to November 3, 1988
- PM UK-Silvertown on November 8 to 11, 1988
- PMB-Brussels on November 16 to 18, 1988

A visit was made to PMG-Bremen warehouses on November 24 to 25, 1988 to review sanitation aspects and the cigarette beetle monitoring program.

PLANS

Implement the new program in SNTA (Algeria) and other licensees through presentations and practical demonstrations.

2028635422

Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

INFESTATION CONTROL IN FTR

OBJECTIVE

Ensure that the new program, including DIANEX applications, is properly implemented at FTR.

STATUS

Factory

The last application of DIANEX general fogging (space) was made during December 1988. The first appliation of DIANEX spot fogging (surface) was made on November 24 and 25, 1988.

Tobacco dust samples were collected in different areas in order to measure their methoprene - DIANEX active ingredient - content (residues). Highly sufficient methoprene concentrations were determined by analyses made in R&D laboratories.

The new program was successfully implemented. One particular source of infestation (cigarette beetle) was found and eliminated by sanitary actions.

Warehouse

The tobacco moth population has decreased considerably due to the very low ambient temperatures registered as from the end of October 1988.

PLANS

Factory

Ensure DIANEX spot fogging every two months and general fogging every three months.

Set up a program that enables determination of the residual amount of methoprene in tobacco dust samples collected in the factory, in order to reduce the frequency of both space and surface DIANEX fogging.

J.-M. Freymond

JMF/vep/December 7, 1988
qr488icjmf

2028635423

Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

DIVISION	:	QUALITY ASSURANCE + TECHNICAL SERVICES
SUBJECT TITLE	:	QUALITY ENGINEERING
PERIOD COVERED	:	OCTOBER - DECEMBER 1988
WRITTEN BY	:	Henry-P (HEP), Morelli-M (MMO)
KEYWORDS	:	machinery, qualification, rod, scanner, visual, quality, audit, PME, methods, focke, protos, kdf3, training

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MACHINERY QUALIFICATION PROCEDURE

Objective

Jointly with local QA's, establish the sampling protocols for any secondary machinery which has to be qualified within PME. Three machines are in the process of being qualified.

Status

The qualification of the three following machines has been postponed to the beginning of 1989.

KDF3 : Qualification should take place in Berlin by February 89.

PROTOS 100 : Pre-Qualification should take place in Berlin by January 89. In the case of this machine PM-USA is highly interested, as members of PM-USA will participate in the qualification in Berlin.

FOCKE 700 : Qualification will take place in BOZ by February 89.

HANDBOOK FOR VISUAL QUALITY AUDIT OF FINISHED PRODUCTS

The project status is reported in the PRODUCT AUDIT GROUP part of this quarterly report.

2028635424

Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

ROD SCANNER EVALUATION

Objective

Evaluate the efficiency of "on-line" Rod Scanners available on the market, i.e. CIM from Accu-Ray and ORIS from Hauni.

Status

A presentation of the status of the project was made in Lausanne in December 1988.

Plans

It is planned to make the same presentation to the affiliates involved in the project. The test will continue in Brussels with emphasis on the elimination of the root causes of the defects.

PME METHODS MANUAL

Several PME methods are under development within the Quality Engineering Group :

- Determination of filter firmness with FILTRONA DHT
- Sampling procedure for strip tobaccos
- Standard format for PME Methods
- Determination of pack seal efficiency with IMPS tester

It is planned to send a release of the PME Methods Manual including these 4 new methods to the affiliates by the first quarter of 1989.

TRAINING PROGRAMS ON QUALITY TOPICS

Objective

Promote the training of the floor personnel on quality in the affiliates or licensees by helping them to build training packages.

2028635425

Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

Status

We currently propose the following audio-visual tools :

- slide show "CIGARETTE AND QUALITY" developed by PME and available in English, French, German and Italian.

- slide show "QUALITY AS THE CONSUMER SEES IT" developed by PMH and available in English, Dutch and Italian.

- training package "ONLY QUALITY HAS A FUTURE" developed by BECKER A-V and available in French and German.

Some of these items have been used by the Italian monopoly, PM-Munich, PM-Berlin and FTR.

Plans

Training is planned to start in PM-UK and in PM Australia by the beginning of 1989.

Further translations of the existing tools are under way and further new shows are being developed.

HEP/vep/January 10, 1989
qr488qehep

2028635426

Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

2028635427

MANUFACT. SERVICES

Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

DIVISION : MANUFACTURING SERVICES GROUP

SUBJECT TITLE : INGREDIENTS, CASINGS & FLAVORS

PERIOD COVERED : OCTOBER - DECEMBER 1988

WRITTEN BY : Schwarb-A. (ADS)

KEYWORDS : ingredient, casing, flavor, prototype, trial, reformulation, evaluation

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1. RECIPE MODIFICATION (Ref. 1 to 5)

Following complaints from PME Affiliates concerning some stability problems (precipitation) with the Aftercut Solution No. 12.2025 FAMA-AC, a study was initiated within R&D.

It appears that following several modifications in the composition of the two base flavors from PM Richmond, these components are significantly less water soluble.
R&D determined the threshold of solubility of the precipitate (= maximal possible quantity of water which can be added without having a precipitation).

The above-mentioned Aftercut Solution is now replaced by No. 12.2026 AFTERCUT ALMANDINE.

All the concerned specifications were changed within PME except for Hungary where previously some points have to be clarified (machinability and contracts).

2. INGREDIENTS

2.1 Usage catalogues (Ref. 6 to 8)

Updated versions of both catalogues were issued on December 15, 1988.

"Usage of Ingredients" and "Usage of Filter Additives"

A change in the procedure to transmit information from Production Center to R&D Manufacturing Services was introduced.

From now on there is one person per Production Center who is responsible for sending appropriate information to the undersigned. All the necessary information needed for any modifications in these catalogues was given to these people.

2028635428

Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

2.2 Block Licorice from Menozzi (Ref. 9 to 12)

Following a complaint from PM Holland, concerning a white substance which can be observed in some "bubbles" of the Menozzi & de Rosa block, R&D contacted the supplier.

This white substance was hydrogenated palm oil and was used as an unsticking agent during storage of blocks.

R&D asked for it to be suppressed and for the blocks to be packed directly in polypropylene bags for PME before storage. After checking feasibility, Menozzi & de Rosa complied to this.

This problem is solved and I would like to underline the excellent collaboration and support that R&D got from the supplier.

2.3 Ingredients trial concept 1989

A regional meeting was held on December 1, 1988, in Cortaillod to establish the material trial concept 1989.

Ingredients concerned are :

2.3.1 Cochise PME code 10.1250

It becomes top priority to have a new manufacturer/supplier qualified.

2.3.2 Block licorice PME code 10.1800

It also becomes top priority to have a new source qualified.

Test under way with two possible alternatives :

- E.V.D., Gardanne, France (Mafco)
- SISTAS , Siirt, Turkey

2.3.3 Propylene glycol PME code 10.0050

Miniprimary tests are ongoing with three potential new manufacturers :

- ERDOELCHEMIE, Köln, West-Germany
- HUELS, Marl, West-Germany
- ARCO, Fos Sur Mer, France

Tobaccos will be processed at the R&D Miniprimary the second week of January 1989 (Project 5037 ANALCIME).

Results expected by mid-February 1989.

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

2.3.4 Licorice in powder PME code 10.1850

R&D had contact with the two new potential sources.

- E.V.D., Gardanne, France
- SISTAS, Siirt, Turkey

Laboratory samples expected end January 1989.

The follow-ups of these tests depend on the results of the ALLANITE project (mail-out test in Switzerland with Fertilizers & Chemicals ZD16 quality).

2.3.5 Natural & Synthetic Menthol
PME Codes 10.2300 and 10.2350

Test under way with two potential alternative sources of menthol.

Natural	FUERST & LAWSON, London, UK "Glacier Brand" from China
Synthetic	TAKASAGO, Tokyo, Japan "Menthol flakes" and Menthol pallets"

The follow-ups of these tests are closely dependent on the results of another R&D project to standardise all the mentholated solutions to solution 11.0065 SMF-D (100 % synthetic menthol + Mint Oils).

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

REFERENCES
==========

1) Profs note "FAMA-AC" from Mr. C. Besso to A. Schwarb, July 26, 1988

2) Memo "Proposition to modify solution FAMA-AC" from A. Schwarb to Mr. E. Cook, July 27, 1988

3) Profs note "Recipe Modification" from A. Schwarb to Mr. W. Steinacher, October 10, 1988

4) Profs note "FAMA-AC Solution" from A. Schwarb to Messrs. W. Steinacher and C. Renaudin, November 11, 1988

5) Memos "Evolution of Specifications" from A. Schwarb, November 14 and December 6, 1988

6) Profs note "Updating of Usage Catalogues" from A. Schwarb, November 18, 1988

7) Memo "Usage of Ingredients" from A. Schwarb, December 15, 1988

8) Memo "Usage of Filter Additives" from A. Schwarb, December 15, 1988

9) Profs note "Block Licorice ex Menozzi" from Mr. M. Murray to Mr. D. Turpin, December 16, 1988

10) Telex/Profs note "Block Licorice" from A. Schwarb to Mr. M. Menozzi, December 19, 1988

11) Telex "Block Licorice" from Mr. M. Menozzi to A. Schwarb, December 21, 1988

12) Profs note "Block Licorice from Menozzi" from A. Schwarb to Messrs. J. Kipfstuhl and P. Loos, December 21, 1988

A. Schwarb

ADS/cdb/January 5, 1989
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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

DIVISION	:	MANUFACTURING SERVICES GROUP
SUBJECT TITLE	:	INGREDIENT AND MATERIAL EVALUATION
PERIOD COVERED	:	OCTOBER - DECEMBER 1988
WRITTEN BY	:	Flury-C. (CAF)
KEYWORDS	:	material,trial,test,evolution,meeting, filtration,filter,plug,wrap,cigarette,paper, tipping

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OBJECTIVE

Evaluate alternative direct materials and ingredients for filters and cigarettes in order to optimize product quality and cost.

MATERIAL TRIALS: CONCEPT 1988 AND ACHIEVEMENTS

The Material Trial Concept, which was valid for 1988, is summarized on Attachment 1. It also shows the achievements so far.

IMPORTANT ACHIEVEMENTS 4th QUARTER

Electrically perforated cork tipping from Tann was qualified on cigarette Raffles 100s. Tann substitutes Interbobbin, as an alternative supplier to Benkert, available to PM-UK.

Project FITIA (Filter Tip Attachment) refers to trials on six different cigarettes, run at PMG Berlin and at FTR. Small industrial trials, as per Step 3, are now scheduled, where 50 bobbins/trial are tested according to the so-called "FITIA Procedure" (Evaluation of Non-tobacco Materials During Industrial Trials). The test results will be carefully evaluated and further action, including the extension of the trials to PMG Munich and PMH Bergen oZ, will be planned. More on Project FITIA see Attachment 2.

The yearly Regional Meeting, held in Neuchâtel on December 1, 1988, treated three topics: Definition of the Material Trial Concepts 1989 for cigarette and packaging materials, as well as exchange of experiences and discussion on present and future organisation of material trials.

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The Minutes of this meeting are available upon request. The Material Trial Concept 1989 for packaging materials is available at Packaging Engineering PM Lausanne (Mr N. Moeller).

The Material Trial Concept 1989 for cigarette materials is attached (Attachment 3). It foresees only four new material trials. The 1989 plans mainly aim at terminating the 22 trials presently ongoing. In addition, six trials were classified as being of top priority.

Some information collected for the meeting can be summarized as follows:

a) The number of ongoing trials decreased by about 25%, from 1987 to 1988, but is still considered rather high.

b) Qualification of a new material/supplier of a cigarette material usually takes at least 18 months and may last several years.

c) The most poor success rate can be achieved with trials referring to cigarette glues, tobacco additives and tipping papers, in this sequence. Glues is also the group with the highest number of trials.

IMPORTANT ONGOING TRIALS

They are summarized on Attachment 4 (MATERIAL EVOLUTION - Highlights of Status Report Nr 41, dated January, 6, 1989.

C. Flury

CAF/December 23,, 1988
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Attachment 1	:	Material Trial Concept 1988 and achievements so far
Attachment 2	:	Project FITIA
Attachment 3	:	Material Trial Concept 1989
Attachment 4	:	MATERIAL EVOLUTION - Highlights of report Nr 41, dated January 6, 1989

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

Cigarette Material Trial Concept 1988 and Achievements — Status: 23.12.1988

* = Objectives entered after November, 1987.
TRIAL START/END = Planned/effective start and/or duration of trial series.
RESULT A = Approved/achieved R = Refused/suspended/abandoned.

		TRIAL START	TRIAL END	RESULT	REMARKS
1. TOBACCO INGREDIANTS:					
1.1	Alternative source for cocoa peel.	11/87	../89		Engel abandoned 10/88.
1.2 *	Alternative sources (to DOW Chemicals) for Propylene Glycol and for	08/88	../89		
	Glycerine.	../88	../89		
1.3 *	Alternative source for block licorice.	08/88	../89		
2. FILTER ADDITIVES:					
	Plasticizer on black semi filtens:				
2.1	Introduce Methoxy-Polyethylene-Glycol MPEG 550 + MPEG 750 (physical mixtune suppliers).	02/88	08/88	A	Schärer & Schläpfer + BP
2.2	Standard recipes (triacetine addition) and application rates, between FTR and INB.	02/88	07/88	A	Std necipe; 8% application
2.3	Qualify at least one alternative source.	07/88	07/88	A	2 sources f. both FTR+INB
2.4 *	Qualify activated charcoal with small granulometry.	02/88	../89		
3. TOWS:					
3.1	Qualify Courtaulds tows				
	- Raffles 100s and Raffles KS 3.0/35Y	05/85	01/88	A	
	- Diana Specially Mild (Italy) 2.1/32Y	07/87	02/88	A	
	- Diana King Size (Italy) 2.5/30Y	10/87	02/88	A	
	- Marlboro Italy (Pan-European) 3.0/35Y	04/86	08/88	A	
	- Marlboro Sweden (FTR) 2.5/30Y	03/88	../89		
	- Viisa (FTR) 2.1/42Y	03/88	../89		
3.2	Develop suitable black tow for new generation machines (KDF II/AF2), with Eastman and Rhodia.	11/87	--	R	Trial suspended; awaiting results new charcoal.
3.3	Alternative source (to BALSTHAL) for crêpe paper.	12/87	../89		
3.4	Qualify Ectona, Great Britain (3.0/35Y; mgt.request).	01/87	../89		
4. PLUG WRAPS:					
4.1	Thind supplier f. medium-ponous (Glatz or Wattens).	01/88	08/88	A	Glatz: PMG; Wattens: FTR
4.2	Fine-tuning high-ponous plug wraps:				
	- Intenchangeability reg. porosity/ventilation.	05/88	--		Pending; see project FITIA
	- Good machinability - adapted papen smoothness.	08/88	--		Pending; see project FITIA
	- Improve splices of Dexten paper.	01/88	09/88	A	Type "Spider 10 mm PP"
4.3 *	Replacement for Mauduit's PPW 140.	01/88	../89		

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5. CIGARETTE PAPERS:

5.1	Alternative source (Sch. & H) for Raffles.	--	--		Pending; product changes.
5.2	Qualify Bolloré (Marlboro paper; mgt. decision)	08/87	05/88	R	Not OK; trials stopped.
5.4 *	Alternative source (to Mauduit) for PM Ultra.	08/88	../89		

6. TIPPING PAPERS:

6.1	Alternative source (to Interbobbin) for Raffles.	06/84	11/89	A	TANN qualified.
6.2	Micro-laser perforation 5M 0.5.3.5 Benkert (PMU).	03/87	../89		See also FITIA (point 8).
6.3	White base paper from Tann.	10/87	../89		
6.4	Qualify Miquel y Costas (EP cork tipping).	03/88	../89		
6.5 *	Laser-spray tippings from Malaucène (mgt request).	04/88	../89		
6.6 *	Baumgartner PSP filters (gluing problems).	02/88	11/88	A	Filter with Sch & H 9500
6.7 *	Equivalence micro-laser perfor. Malaucène + Benkert.	05/88	../89		
6.8	PROJECT F I T I A Refer to Enclosure.				

7. GLUES:

7.1	Improve glue testing + expertise; recommend better glue application units/systems.	01/88	12/88	-	No mtl tests; lab improved
7.2	Alternative source for tipping glue.	09/86	05/88	A	Türmer CF 510
7.3	Alternative source for filter seam glue.	../88	../89		
7.4	Natural glues for the cigarette seam:				
	- Gelatine	12/86	05/88	R	Trials suspended
	- Liquid starch	06/87	04/88	R	Trials suspended
7.5 *	Alternative source for PVA cig. seam glue	06/88	../89		
7.6 *	Alternative quality PVA cig.seam for Raffles	10/88	../89		

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

MATERIAL EVOLUTION - Status Report Nbr 41 of 06.01.1989 Page 6

Issued by:
R & D Manufacturing Services Group

* = New trial.
** = Will be dropped (next report).

P R O J E C T F I T I A (Filter Tip Attachment):

Objective: Improve gluing of tippings to filter plug and tobacco rod;
good machinability (envelope, gluing) at speeds up to 8000 cig./min.

STEPS:

1 Better know-how regarding tippings and glues. Achieved by discussions with suppliers.
2 Set up an Evaluation Procedure for Industrial Trials. Achieved; procedure approved.
3 Set up and use a Test Plan for Industrial Trials. Achieved; plan approved by all prod.centers.
4 Carry out tests (all brands/levels). Ongoing.

SUMMARY Regarding Benkert Blancophan 390:

- Run well on the machines during small test runs.
- Blancophan 390 is expected to be slightly cheaper than Blancophan 36A.
- APPROVALS:
  LMBG / Taste approvals: Panels B OK on PMU03, MER13, MAB01/MAH01, MLX12
  Panel A OK on PMU03 (includes new perforation L5R/400)
- During the first ind. test (50 bobb.; MER13 at FTR), the machinability was not convincing.
- PLANNED:
  Finish all Blancophan 390 tests, evaluate results, then discuss with Benkert.

SUMMARY Regarding Malaucène LS 944 BNG:

- Is considered an improvement compared to 944 BNG.
- White and 3-colour tipping type LS 944 BNG cost approx. 7% more than 944 BNG (= approx. 77'000 $ p.a.).
- APPROVALS:
- LMBG / Taste : Panels B OK on PMT02, MAG02/MAT01
  Machinability: MAG02, with Baumgartner PSP filter +S&H 9500, with TP perforation 4M 0.22.7.5.
- PLANNED:
- Finish ind.trial PMT02 (PMG-B), evaluate results and decide on further action
  (which other cigarettes? which production centers?).

DETAILED TEST RESULTS AND STATUS TO DATE:

STEP	TEST MATERIAL	ENVIRONMENT	AFFIL.	BRAND	START	END	STATUS/RESULT/REMARKS
1 a	Benkert Blancophan 390	FP S&H 9500	PMG-B	MLX12	04/88	08/88	Doubtful B-Panels PMG-M + R&D.
1 b	Repetition 1a	"	510	"	08/88	10/88	OK smoke/Panel B PMG-M + R&D.
2	15 bob. with/without Schl.h.	"	510	"	10/88	11/88	OK machinab.8000/OK 3 B-Panels
	PLANNED:						
	- Accelerate receipt of the 50 bobbins ordered.						
3	- Ind.trial, without Schleifheizung, at 8000, acc.to FITIA procedure. (Benkert might want to be present during test run.)		550	"	01/89	.....	
1 a	Benkert Blancophan 390	FP 24-93	FTR	MER13	05/88	08/88	OK incoming/smoke/B-Panel R&D.
1 b1	Runs at 7000 + 8000 cig.; with/without Schleifheiz.	"	8026 "	"	09/88	10/88	NOT OK machinab. (Dext.24-93?)
1 b2	8000 cig. with/without Sch.	PPW 140	"	"	09/88	10/88	OK machinab.(small qty avail.)
3	50 bob.; FITIA procedure	FP S&H 9500	8062	"	11/88	01/89	OK incom./machinability?
	PLANNED:						
	- Collect all results and issue report.						

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MATERIAL EVOLUTION - Status Report Nbr 41 of 06.01.1989 Page 7

Issued by:
R & D Manufacturing Services Group

* = New trial.
** = Will be dropped (next report).

1	Benkert Blancophan 390	FP S&H 8250+) LSR/400perf.)	PMG-M 757	PMU03	05/88	09/88	OK smoke/incoming/Panels B + A.
	PLANNED:						
3	100 bob. ind.trial; FITIA procedure		805	"	01/89	.....	Ventilation + machinability?
	3 bob. rests to T.Bel for PPM 300 tests.						
1 a	Blancophan 36A; 3/50	PSP Bolloré	FTR	MAB01	07/88	07/88	) Test with diff.filters;
		+S&H150/9500	8041	"	08/88	09/88	) No incoming/OK smoke/Panel B.
1 b	1 bob. Blanco. 390; 3/50	PSP S&H 9500	"	"	10/88	10/88	Low ventilation
2	15 bob. " "	"	"	"	11/88	12/88	OK so-far
3	120bob. " 3/60	PSP 9500	8100	"	01/89	.....	Machinability? ventilation?
	PLANNED:						
	Industrial, FITIA procedure, on 18.01.1989.						
1 a1	Malaucène LS 944 BNC	PSP+Bolloré	FTR	MAG02	07/88	08/88	) FP Dexter eliminated on PSP;
1 a2	"	PSP+diff. FPs	8005	"	07/88	08/88	) TP perforation to be adapted
1 b	TP LS944 perf.4M0.15.4.5	PSP S&H 9500	8028	"	09/88	09/88	OK filter S&H 9500; low vent.
1 c	" " " 4M0.20.7.5	" " "	8046	"	09/88	09/88	Increased ventilation
-	" " " 4M0.22.7.5	" " "	FTR	"	10/88	10/88	Provisionally adopted constn.
3	" " " "	" " "	"	"	11/88	11/88	OK ind.trial LS/perfo/filter
**	APPROVED; final report MID 09.12.1988; product specs modified. (perf. 4M0.26.7.5 not needed).						
1	Malaucène LS 944 BNC	S&H 9500	PMG-B	PMT02	06/88	07/88	OK smoke/3 B-Panels.
2	15 bobb.; Protos/Max 80	"	496	"	07/88	08/88	OK with/without Schleifheiz.; 7100 cig. only (loose ends).
3	50 bobb.; FITIA Procedure	"	544	"	10/88	01/89	
	PLANNED:						
	Test run terminated; report expected WEEK 03/89.						
1	PSP filter 34.9142: From 400K to S&H 9500 + porous semi	Cork imit 944 BNC	FTR	BRE01	01/89	DEVEL.	(Project NASHVILLE)
				FL102	01/89	.....	Ventilation? Taste?
	PLANNED:						
	5 cartons of filters available for trials BRE01 (Product Development) and FL102 (Manuf.Services)						

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CIGARETTE MATERIAL TRIAL C O N C E P T 1 9 8 9

* = Trial ongoing ** = New trial

1. T O B A C C O I N G R E D I A N T S

1.1 Qualify an alternative source for cocoa peel and/or "Cochise". *
Reason: Strategic (alternative source). TOP PRIORITY
Start of trials (with Meiners Commodity): 03/1985.

1.2 Qualify an alternative source for propylene glycol. *
Reason: Strategic (alternative source).
Start of trials: 08/1988.

1.3 Qualify an alternative source for block licorice. *
Reason: Strategic (alternative source). TOP PRIORITY
Start of trials: 08/1988

1.4 Confirm qualification of Fertilizers & Chemicals, Haifa, as a supplier of licorice powder. *
Reason: Confirmation of previously approved quality/supplier, following quality problems.
Start of trials: 08/1988.
If not successful: Qualify EVD Gardanne and/or Sistas.

1.5 Qualify an alternative source for natural menthol and/or for synthetic menthol. *
Reason: Strategic (alternative source).
Start of trials: 10/1988.

2. F I L T E R A D D I T I V E S

2.1 Continue research/qualification reg. small granulometry charcoal RC 328 as used by PM-USA. *
Reasons:
a Quality improvement of black semis (more regular distribution of charcoal, and RTD can be obtained more easily).
b Cost saving of approx. 200'000$ p.a. (15-20% less charcoal are needed)
Start of trials: 06/1988.

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

* = Trial ongoing ** = New trial

3. T O W S

3.1 Terminate qualification of Courtaulds for the supply of
- 2.1/42Y FTR VAF01 (second supplier) *
- 2.5/30Y FTR MLE01 (second supplier) *

Start of trials: 11/1987.

- 3.0/35Y PMB MLB (extend qualification to PMB (MLB) and to two licensees (Algeria and Finland) *

Start of trials: 12/88.

- 3.0/35Y FTR MLK/B (extend qualification to FTR) **

TOP PRIORITY

3.2 Qualify alternative source for crêpe paper. *
Reason: Strategic (and security).
First contacts: 06/1988.

3.3 Qualify Ectona, Great Britain (3.0/35Y). *
Reason: Strategic, Ectona = European Eastman company
(test upon management request).
Start of trial: 01/1987.

4. P L U G W R A P S

4.1 Ensure that all three high-porous papers (Sch & H, Mauduit, Dexter) give the same ventilation (super-positionning tests).
At the same time, replace Intertaba's Sch & H 8250 by the appropriate new Sch & H 9500 / 10'000.
Reason: Quality and standardisation.
Start of trials (with Sch & H 10'000): 11/1988 *

4.2 Increase smoothness of high-porous paper Dexter 24-93 (at present, it cannot be used on both semi and combi filters).
Reason: Quality and logistical flexibility.

4.3 Qualify a replacement for Mauduit's PPW 140. *
Reason: Commercial (replacement). TOP PRIORITY
Start of trials: 05/1988.

4.4 Ensure that the medium-porous papers (Sch & H, Mauduit, Wattens, Glatz) give the same ventilation (super-positioning tests).
Reason: Quality. **

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5. C I G A R E T T E P A P E R S

5.1 Qualify alternative source (Sch & H) for Raffles.
Reason: Strategic (and security).

5.2 Qualify alternative source for PMU cigarette. *
Reason: Strategic.
Start of trials: 08/1988.

5.3 Qualify alternative source (Mauduit) for Sch & H's Pella 54 Mn.
Reason: Strategic (and security). **

6. T I P P I N G P A P E R S

6.1 Qualify micro-laser perforation 5M 0.5.3.5 from Benkert. *
Reason: Strategic (second supplier for this perforation).
Start of trials: 03/1988.

6.2 Qualify white base paper from Tann. *
Reason: Commercial.
Start of trials: 10/1987.

6.3 Qualify Miguel y Costas (EP cork tipping). *
Reason: Commercial, upon management request (qualification of a supplier in EEC).
Start of trials: 03/1988.

6.4 Laser-spray tippings from Malaucène (instead of EP). *
Reason: Gain experience on this new technology (management request).
Start of trials: 06/1988.

6.5 Establish equivalence of porosity of micro-laser perforation, between Malaucène and Benkert (4M 0.15.4.5 vs L4R/116). *
Reason: Quality.
Start of trials: 11/1987.

6.6 Project FITIA (Filter Tip Attachment), to improve the gluing of the tippings to the filter plug and the tobacco rod, with good machinability (envelope, gluing) at speeds up to 8000 cig./min. * TOP PRIORITY
Reason: Quality and machinability.
Start of project: 01/1988.

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* = Trial ongoing ** = New trial

7. G L U E S

7.1 Qualify alternative source for PVA cigarette seam glue. *
Reason: Strategic.
Trials reactivated 09/1988.

7.2 Develop and qualify natural glues for the cigarette seam.
Reason: Commercial and legal (upon management request).
Re-activation of trial planned for beginning 1989.

7.3 Qualify an alternative glue for the cigarette seam of * TOP PRIORITY
Raffles.
Reason: Quality (cigarette seam opening) and machinability.
on high-speed maker.
Start of trials: 11/1988.

7.4 Qualify an alternative Hotmelt for the filter seam
(resistant to triacetine).
Reason: Strategic (alternative source). **

ISSUED BY:
C. Flury, R&D MSG
Neuchâtel (Switzerland)
05.12.1988
(mev-conc89)

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

MATERIAL EVOLUTION - Highlights Nbr 41 of 06.01.1989

Issued by:
R & D Manufacturing Services Group

TOPIC 1: Filter Additives

An intermediate report is available referring to cigarettes BRD/MAK/MPH, produced with small granulometry charcoal RC 328. See page 2.

TOPIC 2: Rhodia Tongue

This piece of equipment, a Rhodia development, was tested at FTR for two weeks and is presently being tested at Intertaba. It was presented at the Regional Filter Meeting held in Bologna in October. The tongue is expected to allow tow savings and reduction of the standard deviation of the filter RTD. Rhodia contacted all PM production centers on this matter.

The following important information should be given to whom it may concern, in all production centers:

a) Technical and testing matters (test plans, contacts with supplier, reporting, etc.) are coordinated by Mr T.Bel, R&D Manufacturing Services, Neuchâtel. He will write a preliminary report for the intention of all production centers once the results found by FTR and Intertaba are evaluated.

b) The legal matters (royalties, etc.) will be coordinated by the appropriate headquarter function once concrete test results (profitableness; see point a above) are available.

TOPIC 3: Tow

Following the qualification of tow 3.0/35'000Y Courtaulds on the Italian Marlboro, confirmation trials are ongoing on the Algerian MLK and planned on PMB's MLB15 as well as on ATO's (Finland) MLF.
As soon as (positive) results are available, trials with this tow will be initiated at FTR, PMG and PMH. For price-political reasons, it is important to terminate the qualification of this tow at PMG and PMH before the end of this year. See page 3.

TOPIC 4: Crêpe Paper

Paper Mills Netstal (Switzerl.) will submit a sample in February. The results of this test will permit an estimation of the success rate and a discussion of the subject with management. In fact, should the chances be well, the trial series will be continued; should they be poor, we might consider to stop with Netstal and to increase the Balsthal (standard material) security stock. See page 3.

TOPIC 5: Plug Wraps

The two high-porous plug wraps Mauduit PPW 140 (25) and Sch & H 10'000 are available.
Refer to TOPIC 7 below. See page 4.

TOPIC 6: Project FITIA (Filter Tip Attachment)

Project FITIA refers to the improvement of the gluing of the tipping paper to the filter plug and the tobacco rod. Industrial trials (50 bobbins or more) are presently being run according to the so-called FITIA Procedure (Questionnaire for the Evaluation of Non-tobacco Material during Industrial Trials). Tested are two new tipping base papers: Malaucène LS 944 BNG and Benkert Blancophan 390. A preliminary evaluation of the test results and a plan for further action will be prepared by end February. See pages 6 and 7.

TOPIC 7: Filtrona PPW 300 Porosity Measurement

The poor functioning of this unit is a serious hindrance as regards paper trials: Many trials cannot be carried out as planned (high-porous plug wraps, laser-spray tippings). An action plan is in preparation.

TOPIC 8: Glues Cigarette Seam

During the regional meeting in Contaillod, it was agreed that PMG Benlin will carry out an MLK37 test run using gelatine Lessoflex B2G, mais starch and PVA. The test cigarettes will be sent to PM Richmond for taste evaluation.

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Source: https://www.industrydocuments.ucsf.edu/docs/zpnm0000

RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

DIVISION	:	MANUFACTURING SERVICES GROUP
SUBJECT TITLE	:	PRODUCT MODIFICATIONS (LICENSEES)
PERIOD COVERED	:	OCTOBER - DECEMBER 1988
WRITTEN BY	:	Kopp-A.-M. (AMK)
KEYWORDS	:	Product, Specifications, Monitoring, Quality, Improvement, Implementation, Modifications, authorized, planned.

OBJECTIVES

To monitor product quality and implement cigarette construction modifications when necessary in order to ensure that the quality objectives of the products are met.

PRODUCT MONITORING

A new version of the Monitoring Report concerning all Marlboro brands (32) produced by third parties for PM-Europe, as well as Ambassador, Diana cigarettes manufactured in Italy and the various Finnish brands, was issued on December 12, 1988. This covered production from January to October 1988.

This new version and all these results were presented at a Monitoring Meeting with EEMA and EEC Operations Departments on December 16, 1988.

Of the 52 brands monitored, 48 (92%) showed smoke deliveries within objectives, 2 had smoke deliveries which were on the low side and 2 on the high side.

Action :

Low Smoke Deliveries :

- ML Lights Greece : A modified version will be implemented by mid-January 1989 (Project "Chronos").
- ML 100's Greece (new diluted version) : Filter RTD has been decreased to bring deliveries up to target. The change took place in December 1988.

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RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

High Smoke Deliveries :

- Diana KS 84mm Italy : Diana cigarettes (Full Flavor & Mild) were re-developed (Project "Hurni"). The modification was introduced mid-December 1988.

- ML Red Nigeria : 100% cut-filler ex PMI will be used as from beginning of 1989. At the same time, a high-porous cigarette paper will be used in order to bring the product below 18.0 mg.

Finland :

All products comply with the Finnish regulations and the printed figures.

However, some deliveries do not fully match product specifications. This was presented and discussed during the last Monitoring Meeting (EEMA Region). Product specification changes will be proposed and further to various modifications in Finland (blend changes especially), a meeting will be organized in February between Manufacturing Services and Area Operations in order to review all specifications.

Moreover, to improve the Finnish cigarette paper and the quality of PM cigarettes manufactured in Finland, it was decided during the last Monitoring Meeting to start a technical assistance programme with Tervakoski Paper Mill. This should take place in the first quarter of 1989.

SPECIFICATIONS
==========

New specifications were issued for Diana - Full Flavor and Mild cigarettes produced in Italy for the French Market (Project "Lancia").

Ambassador (MAA) and DIANA (DIF and DIM), 80 mm-versions, produced in Italy have now been withdrawn.

A.-M. Kopp

References :
- Monitoring Report, by Kopp-A.M., dated December 12, 1988.
- Letter re Finland (Tervakoski paper), by Kopp-A.M. to M. Bourlas, dated November 17, 1988.

AMK/January 4, 1989
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RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

DIVISION	:	MANUFACTURING SERVICES GROUP
SUBJECT TITLE	:	PRODUCT MONITORING AND CHANGES (AFFILIATES)
PERIOD COVERED	:	OCTOBER - DECEMBER 1988
WRITTEN BY	:	Bel-T. (THB) Flury-C. (CAF)
KEYWORDS	:	product,specifications,monitoring, quality,improvement,implementation, modifications,changes,cigarette

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OBJECTIVE

Monitor product quality and implement cigarette construction modifications when necessary, to ensure that the quality objectives and specifications of the product are met.

GENERAL

During the 4th quarter 1988, 40 cigarette product specifications were updated by Manufacturing Services and 16 cigarette product specifications were prepared on behalf of Product Development. Seven filter specifications were written.

Monitoring Meetings were held in Bergen, Munich, and Neuchâtel, in October and in December.

RESULTS (IMPLEMENTED PRODUCT MODIFICATIONS)

The following important product changes were implemented:

a) The following specifications were modified with regard to the filter, the cigarette paper (permeability) and/or the tipping paper (porosity), so as to adjust the smoke yield to the specified values:

Merit 100s	MEH04	(PMH)	
L & M Full Flavour	LMF03	(PMG)	
Marlboro Lights 100s DB	MHL01	(PMG)	
Marlboro KS UK	MLB11	(PMG)	+ MLB19 (PMH)
Merit Ultra	MEU05	(FTR)	
Marble Arch	MRB01	(FTR)	

Seven Marlboros (PMG) from low- to high-porous cig.paper.
Seven MPHs from Pela 44 Mn to Pela 54 Mn

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b) MAB01/MAH01 (FTR):
Baumgartner PSP filter with plug wrap Schoeller & Hoesch FU-POV 9500 and with tipping adapted from 3/50 to 3/60.

c) MAG02/MAT01 (FTR):
Baumgartner PSP filter with plug wrap S&H 9500, with tipping adapted from 4M 0.15.4.5 to 4M 0.22.7.5 and with new base paper for high-speed makers, Aquafuge LS 944 BNG.

d) Raffles RAH (PM-UK)
Change of blend. Tipping paper adapted accordingly, from 3/10 to 3/20.

e) Ambassador KS MAJ01/02 (PMH) and MAK05/06 (FTR):
Use of high-porous filter 34.7340 (standardisation) and tipping adapted accordingly to perforation 2M 0.075.5.5.

f) The production of the following cigarettes was transferred:

Virginia Slims Lights VIL04	From PMG-Berlin to PMH
Job Bleu Filtre JOB03	From Sullana to FTR
Job Bleu Nacré JON03	From Sullana to FTR
L & M King Size LMK13	From Sullana to FTR
L & M King Size LMG03	From Manchester to PMG-MUnich
Chesterfield KS Filter CEG09	From Manchester to PMG-Munich
Lark Filter King LAG04	From Manchester to PMG-Munich

PLANS (AUTHORIZED MODIFICATIONS)

The following modification is approved, but not yet introduced:

Marlboro Lights MHX01/03 (PMG) and MHX06 (PMH) as well as Marlboro Lights UK MHX05 (PMH) and MHX08 (PMG):
Standardisation of filters and simultaneous adaptation of tipping paper perforation and/or cigarette paper permeability.

T. Bel C. Flury

CAF/December 23, 1988
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EDP SUPPORT GROUP

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RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

DIVISION : EDP SUPPORT

SUBJECT TITLE : COMPUTER APPLICATIONS

PERIOD COVERED : OCTOBER-DECEMBER 1988

WRITTEN BY : Clark-D. (DOC)

KEYWORDS : COLDAC, electronic agenda, quality audit, TLS, data base, cigarette modelling, simulation, TLA sample control, CIR applications.

CICS-2 for R&D

CICS-2 has been defined and implemented as the R&D production system. The CSP environment has been installed, and the new implementations of the Project-Cost/Rebilling system, TLA and TQA applications were put into production under CICS-2. Other strictly R&D applications will be moved from CICS-1 to CICS-2 as modifications or updates as required. We (R&D) will begin to exercise more and more independent control of this environment (relying less on FTR) during 1989 and especially as our applications are converted to the European Data Center.

CSP = CROSS SYSTEM PRODUCT (IBM)

The development environment, philosophy and procedures for CICS-test, application archiving, and "transfer-into-production" were defined. These were coordinated with FTR and with the EDC in order to conform as much as possible to current and planned procedures. R&D will continue to use CSP for all new applications and for major modifications of current applications written in UFO or COBOL. Overall experience with this product has been relatively positive.

TLA - TOBACCO LOT ANALYSIS / TQA - TOBACCO QUALITY AUDIT

The re-implementation of the TLA application, and the definition and implementation of the TQA application were completed, transferred into production, documentation completed, and users trained. Only a few minor problems were encountered, which were quickly resolved.

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PROJECT-COST / REBILLING APPLICATION

This entire application has been re-written in CSP. Modifications and enhancements were made as required by the users. Transfer into production required development of new procedures for CSP generated applications. These were coordinated with FTR and the European Data Center Group in Lausanne.

A FOCUS data base, with appropriate loading procedures, has been put in place. This was utilized to analyze all of the data for 1988 and generate the required management reports. The user department responsible for the application will be trained on FOCUS during 1st quarter 1989.

CIR = CIGARETTE INFORMATION REPORT

A FOCUS data base, with appropriate loading procedures, has been put in place. The principal user is fully trained on use of FOCUS and able to work independently. Training for users in other departments, notably the Product Development Group, is now in progress.

NON-TOBACCO MATERIAL INSPECTION

Work on this application has progressed much more slowly than planned during the quarter. The initial portion of the system is close to ready for the users. It is however now clear that we need a significant amount of dedicated assistance from the user department to evaluate and control the procedures that we have developed, evaluate with us when and how this should be made available to users, and help define the remaining problem areas. This re-organization of the implementation strategy is in principle agreed to by the user management and details will be worked out in January.

SMOKING LAB / QC AUTOMATION

Hardware configuration of the DEC/Vax system software, Beckman CALS application environment, and general LAN and Ethernet network links between all systems and terminals/instruments for development is defined and in place.

We are progressing well, with support and assistance from the users side, on definition of the required dictionaries (samples, tests, screens, and calculation procedures). Additional training courses from Beckman have been followed by our MIS staff and by the Smoking Lab supervisors who are involved in this project. Coordination and communication with Holland, Munich and Lausanne

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continues with benefits to all concerned. A visit was also made to the TLA group in Richmond to exchange experiences and establish a working relationship for future opportunities to benefit from our mutual experiences.

Additional modifications and extensions have been made to the PC-based TETA (Technicon Tobacco Analysis) workstation, primarily to satisfy the needs of Holland. This system is now documented (user and system level) and in routine use in PMH.

Standard RS-232 output digital voltmeters for instruments like the CO/NO workstation have been selected, evaluated and received. Work on making this CO/NO workstation operational with a Beckman Digimetry controller will be scheduled for January/February. This will liberate a "spare" HP-Datacap controller for us and the workstation will be made available to Holland and Munich.

Extension of the Ungermann-Bass Net-One LAN to the Smoking Lab areas is still awaiting final decision and approval for renovations to that building. The trunk cable has been pulled close to the areas required, with sufficient taps to cover our requirements. Network interface units are on hand.

COLDAC SMOKING LABORATORY SYSTEM

The frequency of hardware problems on the old HP/COLDAC system continues to increase. We are very often confronted with long repair times from HP due to lack of competence with these old systems and/or lack of available spare parts. We are trying to maintain the optic of minimum investment in this system in order to conserve resources for development of the new replacement system.

Changes were made to the TLA sample introduction, processing, and output of results to the IBM system in order to increase the Lot number from 4 to 5 positions. Additional cleanup of other identification information for TLA lots was made at the same time (grade, due date, crop-year/sequence, etc.)

Modifications were made to the procedures which control transfer of final sample results to the IBM system. These were required in order to make the distinction between an analytical result of zero and a missing/non-analyzed result more clear.

HARDWARE/SOFTWARE - INSTALLED/ORDERED

8 IBM-3192-G (Graphics) terminals received; 5 installed
8 IBM-PS/2 Systems received; 5 installed
2 IBM-3812 Laser printers ordered

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PROFS TRAINING

Two additional users were trained during this period. There are now 78 "userids" and 91 "nicknames" in R&D.

DATA RESOURCES MANAGEMENT

Work continues slowly on this revision of the PME Reference-of-Codes. Input has been created for definition of the Cigarette Code chapter of this system and a preliminary file sent to Lausanne for review. Requests to modify the structure of this file was received. Loading of this section of the data base will be done from R&D information in January.

CDB - CIGARETTE DATA BANK

All of the modifications planned for Phase-1 of the update of the Cigarette Data Bank application have been made and put into production (redefinition of screen images, suppression of some data items, and addition of some additional fields. Phase-2, replacement of APLDI by FOCUS procedures for ad-hoc query of the data base is well under way. Required data items have been defined with the responsible project leaders and an initial group of users have followed a FOCUS training course. Structure on the FOCUS data base, procedures for loading, and "prototype" query procedures will be tackled in January with the users. Phase-3 modifications (replacement of the DL/1 data base and inclusion of capabilities to monitor and manage materials) will be defined in conjunction with transfer of this application to the EDC and with progress on the Incoming Materials project during 1989.

CIM - CIGARETTE-INSPECTION-MODULE EVALUATION

Assisted with the final analysis and writing of the final report on the evaluation of this device. Results to be presented to top management in Lausanne in December.

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